Price 35 cents

Chemical Week

May 10, 1958

Cultivating ag chemical sales: how experts view today's problems, long-term outlook . p. 21

Nuclear fuel reprocessing—package plant offers new key to economical A-power . p. 31

Does she color her hair? One of three women does. Market: $58 million this year . . p. 34

Round-the-clock pollution watch makes Esso a better neighbor. Idea for you ? . p. 47

First look at '57 import data. Over-all, an increase of 1%. Here's the breakdown . . p. 69

ANN ARBOR MICH
513 N 1ST ST
UNIVERSITY MICROFILMS IN
G.P. POWER

A McGRAW-HILL PUBLICATION

There's no "love" in this game

TURF INSECTS give no quarter when they set their choppers chewing on your grass. But they'd better change their diet if they plan to reach old age. Shell Chemical now makes the lawns strike back.

Long-lasting *dieldrin*, made by Shell Chemical, now effectively protects the turf in lawns, parks, and fairways against the ravages of grass-killing insects.

Easy to apply, this potent insecticide provides effective control for weeks against lawn foliage wreckers such as cutworms and lawn moths. And dieldrin protects turf *for years* against root-destroying soil insects such as white grubs, wireworms, and Japanese beetle grubs. Even ticks, chiggers, fleas and ants living in the grass are destroyed by dieldrin.

Developing this use of dieldrin to protect landscaping from insect damage is another important service Shell Chemical renders to help make modern living more comfortable and pleasant.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK

SHELL

GAYLORD TRIMS
YOUR PACKAGING COSTS

Gaylord's approach to packaging doesn't stop with the corrugated box itself. We take a fresh look at your entire packing and handling cost picture, then tailor a program to your exact measure.

Regular cartons in big volume . . . engineered packaging . . .
your nearby Gaylord man knows both. And he is cost-conscious either way.

GAYLORD
CONTAINER CORPORATION

Gaylord Boxes

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**

Oronite® PHENOL

is for Oronite customers

—now and in years to come

Oronite's marketing policy and unique position as a phenol producer is your assurance of a most dependable source.

As a producer, Oronite does not compete with its customers by using its phenol production for end-products. As your demands for phenol based end-products constantly grows, Oronite will be able to supply your increasing needs.

And, because Oronite is the only U. S. phenol producer with complete control of raw materials and manufacturing, increased production capacity is no problem. Your growing phenol requirements can be met promptly. By doing business with Oronite there is less chance of any interruption in supplying your needs.

For quick service, Oronite maintains bulk terminals in Richmond, Calif., New Orleans, Chicago and Patterson, New Jersey. Tank car, tank truck and drum shipments can be made to you almost overnight.

It will pay you to get the full Oronite phenol story. Contact the Oronite office nearest you.

ORONITE CHEMICAL COMPANY

A CALIFORNIA CHEMICAL COMPANY SUBSIDIARY

EXECUTIVE OFFICES • 200 Bush Street, San Francisco 20, California

SALES OFFICES • New York, Boston, Wilmington, Chicago, Cincinnati, Cleveland, Houston, Tulsa, Los Angeles, San Francisco, Seattle

Foreign Affiliate: California Chemical International, Inc., San Francisco, Geneva, Panama

4860

Chemical Week

TOP OF THE WEEK

MAY 10, 1958

- **New river-pollution regulations.** Ohio River Valley group decides this week to adopt rules governing discharge of chloride-containing wastes ..... **p. 23**
- **National Research decides to concentrate on "modern metals,"** pulls out of Escambia Chemical Corp. ..... **p. 24**
- **Columbia-Southern shows off its research plans** at new Barberton, O., laboratories ..... **p. 59**
- **How does a small chemical maker recover from a major fire?** Columbia Organic shows how to rebuild in a hurry, and expand, too ..... **p. 75**

17 BUSINESS NEWSLETTER

21 Booming food sales indicate no farm slump—chemical makers tell CW their business has no way to go but up.

23 ORSANCO proposal for regulating chloride-containing plant wastes in Ohio River Valley: store waste for discharge at high river flow.

23 Two countries, two mines—Potash Co. of America reveals how it will use now-abuilding plant at new Canadian ore development.

24 National Research pulls out of Escambia venture—remaining partners may boost their stake in chemicals.

27 WASHINGTON NEWSLETTER

31 ENGINEERING
Atomics International readies package plants for low-cost reprocessing of nuclear fuel at reactor sites.

34 SPECIALTIES
Sales of hair colorants are growing at a 25%/year clip, will top $58 million this year.

47 PRODUCTION
Esso's all-out attack on pollution relies on around-the-clock patrol of refinery, surrounding community.

55 TECHNOLOGY NEWSLETTER

59 RESEARCH
Polycarbonates, titanium dioxide pigments, benzene hexachloride—they're all getting hard study at Columbia Southern's new research lab.

65 MARKET NEWSLETTER

70 SALES
First '57 figures on over-all chemical imports show slight increase over '56. But five of seven broad commodity areas post bigger-than-average gains.

75 ADMINISTRATION
How a small chemical maker rebuilt after a disastrous fire, came out better off than before.

82 CHARTING BUSINESS
Output of coal chemicals has slumped during current steel production slack. Here's how ammonium sulfate production has been hit.

COVER—COURTESY ROUX LABORATORIES, INC.

40,575 copies of this issue printed

Vol. 82
No. 19

Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York 36, N.Y. Printed in U.S.A. Second-class mail privileges authorized at Philadelphia, Pa. © Copyright 1958 by McGraw-Hill Publishing Co., Inc. All rights reserved. Subscription: $3/year in U.S.A., U.S. Possessions; $4, Canada; $15, other Western Hemisphere countries; $25, all other countries. Also see p. 12.

Postmaster: Please send Form 3579 to Chemical Week, 330 West 42nd St., New York 36, N. Y.

CHEMICALS OUTLOOK

May, 1958

This news bulletin about Wyandotte Chemicals services, products, and their applications, is published to help keep you posted. Perhaps you will want to route these and subsequent facts to interested members of your organization. Additional information and trial quantities of Wyandotte products are available upon request . . . may we serve you?

PURECAL O REDUCES PAINT-EXTENDER COSTS

Wyandotte's new grade of precipitated calcium carbonate, Purecal* O, is finding increased acceptance as a paint extender, replacing costly prime pigments and improving whiteness and brightness of colors.

Precipitated at an average particle size of 0.1 to 0.2 micron, Purecal O is a more uniform homogeneous product containing 20% more particles per pound, compared with other premium-quality paint extenders. Thus, smaller quantities will maintain brightness and opacity . . . while improving gloss.

With its fine particle size, Purecal O provides maximum hiding power. The particles are relatively nonsettling, and their bodying action serves to keep coarser pigments from settling out . . . resulting in more uniform, longer lasting dispersion; longer shelf life; minimum floating of pigment when applied; improved uniformity and tinting power of the dried film.

CUBICAL SHAPE IMPROVES FLOW, IMPARTS GLOSS

Purecal O is consistently cubical in shape, rather than acicular, as are many other precipitated calcium carbonates. This cubical shape improves the flow, leveling, and gloss of paint.

And Purecal O contains no impurities which impart off-white or muddy colors to paints. Its uniform purity (which meets U.S.P. standards) is reflected in its whiteness and brightness, which extends over the entire range of visible light. No prime pigments are needed to "mask" Purecal O.

What's more, Purecal O has a very low level of bivalent metallic ions, and will not cause thickening and gelation of emulsion-type paints. It is completely compatible with rubber and plastic latices.

Purecal O has already found wide application in paper coating. Its characteristics suggest its use in other fields, such as: rubber, ink, plastics, and pharmaceuticals.

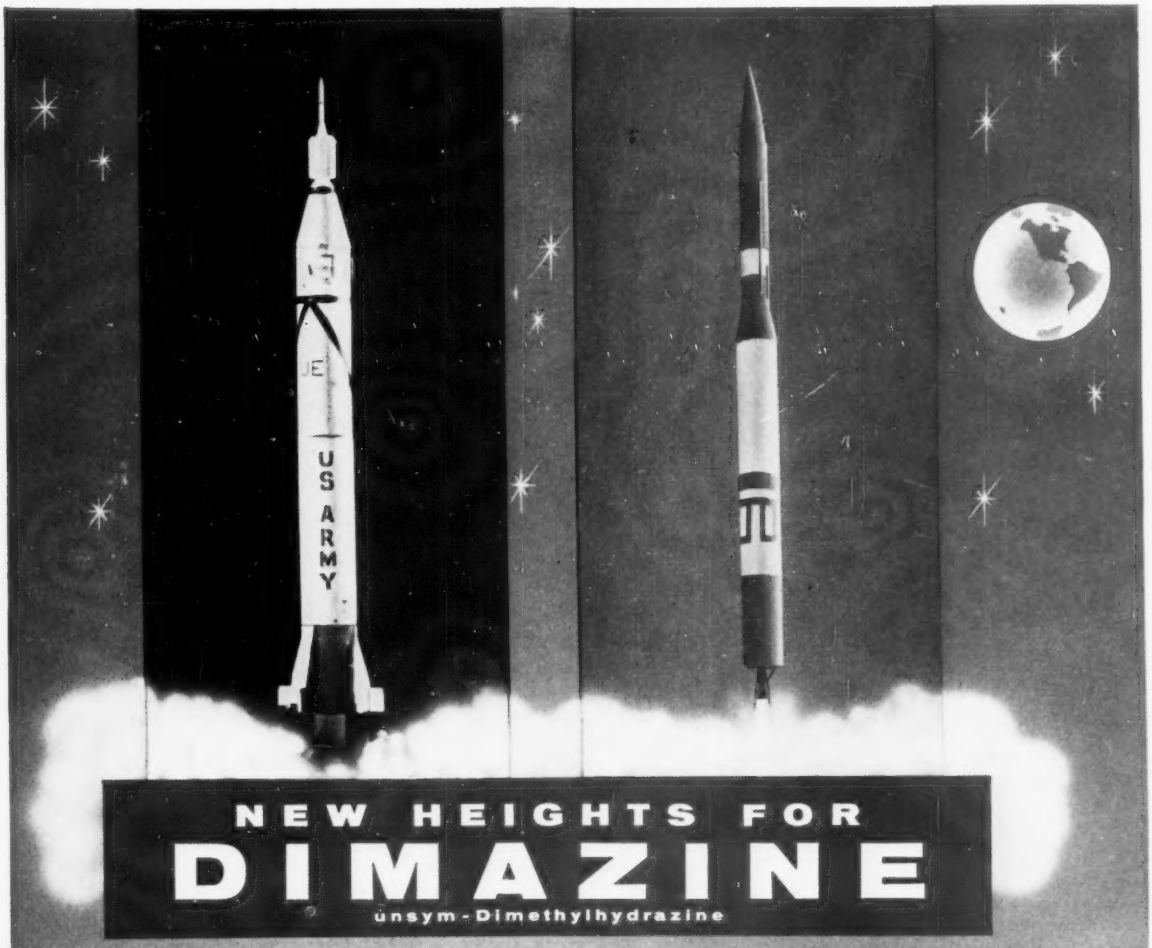
For further information, or samples of Purecal O, write us on your company letterhead. Address inquiries to Department CO for prompt attention.

*REG. U.S. PAT. OFF.

Wyandotte CHEMICALS

WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE • MURIATIC ACID • HYDROGEN • DRY ICE
GLYCOLS • SYNTHETIC DETERGENTS (anionic and nonionic) • CARBOSE® (Sodium CMC) • ETHYLENE DICHLORIDE • DICHLORODIMETHYLHYDANTOIN
CHLORINATED SOLVENTS • *OTHER ORGANIC AND INORGANIC CHEMICALS*



NEW HEIGHTS FOR DIMAZINE

unsym-Dimethylhydrazine

DIMAZINE, the liquid fuel with the unique combination of all-round advantages, played a major role in powering *both* the Army Jupiter-C and Navy Vanguard satellite vehicles.

The successful orbiting of our earth satellites marks a new high point in the scientific and technological achievements of our defense services and their industry contractor teams. Westvaco is privileged to have contributed to this effort by pioneering the commercial development and large-scale production of UDMH, under the trademark *Dimazine*.

Photos: Courtesy U.S. Army and U.S. Navy

fmc
FOOD MACHINERY AND CHEMICAL CORPORATION ®

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Westvaco Chlor-Alkali Division

General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

BUTADIENE CAPACITY INCREASED

365,000 Tons/yr in 1957

85% THRU ISOFLOW HEATERS

...and "Isoflows" in five new Butadiene plants are additionally supplying 1,000,000 lbs/hr of superheated steam up to 1400° F

Butadiene capacity is mushrooming to meet the rising demands of synthetic rubber and chemicals. Of the new butadiene plants put into operation during 1957, Petrochem Isoflow Furnaces have been installed in the 5 largest, representing approximately 85% of the total increased capacity in the U.S.

Isoflow Furnaces efficiently perform two important heating functions, depending upon the butadiene process involved:
(A) To heat directly the butane-butene feed stock and steam to a high temperature for dehydrogenation.
(B) To supply highly superheated steam which in turn heats the butane-butene stock for dehydrogenation.

The unique design and operating features which have led to the wide acceptance of Petrochem Isoflow Furnaces include:

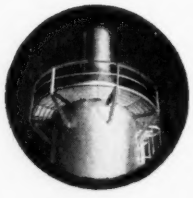
- **Uniform Heat Distribution**
- **Maximum Fuel Efficiency**
- **Low Pressure Drop**
- **Low Maintenance**
- **Zero Air Leakage**
- **Minimum Ground Space**
- **Simplicity of Design and Construction**
- **Short Length of Liquid Travel**
- **Series, Multipass, all parallel flow**
- **Excess Draft for High Overload**

For butadiene production, catalytic reforming or any other petroleum, petrochemical or chemical process there's a Petrochem Isoflow Furnace for any duty, temperature and efficiency.

UNLIMITED IN SIZE ... CAPACITY ... DUTY

PETRO-CHEM DEVELOPMENT CO., INC. • 122 EAST 42nd St., New York 17, N. Y.

REPRESENTATIVES:
Rawson & Co., Houston & Baton Rouge • **Wm. H. Mason Co.**, Tulsa • **Lester Oberholtz**, Los Angeles • **Faville-Levally**, Chicago
D. C. Foster, Pittsburgh • **Turbex**, Philadelphia • **Flagg, Brackett & Durgin**, Boston • **G. W. Wallace & Co.**, Denver & Salt Lake City
International Licensees and Representatives: SETEA–S.A. Comercial, Industrial, y de Estudios Tecnicos, Buenos Aires, Argentine • Industrial Proveedora, Caracas, Venezuela • Societe Anonyme Heurtey, Paris, France • Societe Anonyme Belge, Liege, Belgium • Petrochem G.M.B.H., Dortmund, Germany • Heurtey Italiana S.P.A., Milan, Italy • Birwelco Ltd., Birmingham, England



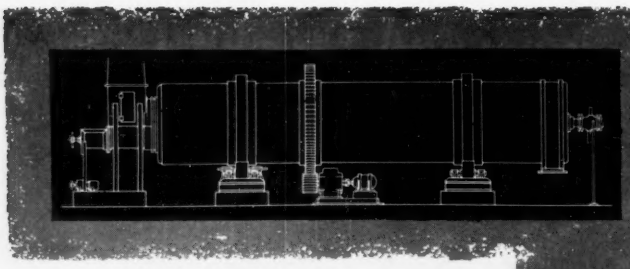
PERFECTED BY RESEARCH
PROVED IN PERFORMANCE

Esso

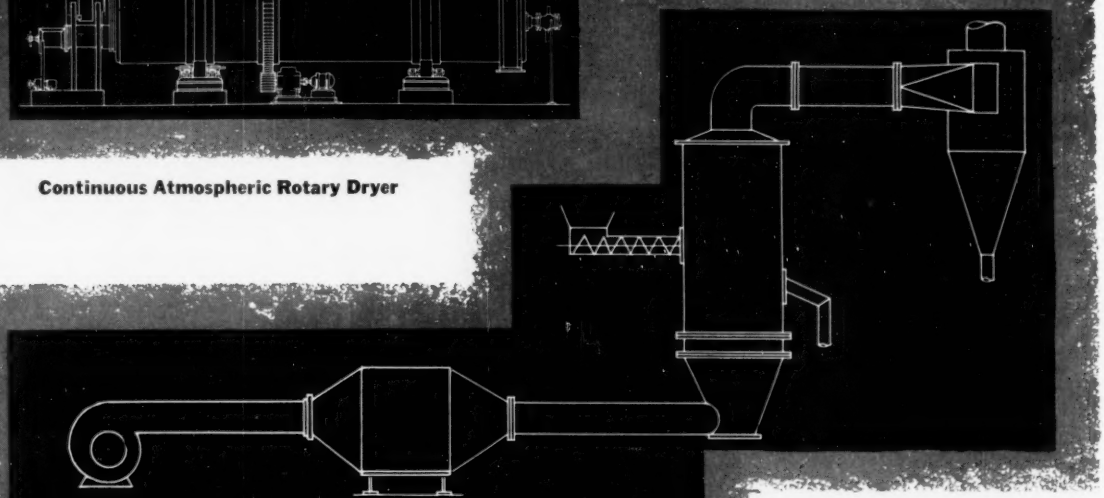
PETROLEUM SOLVENTS

WATCH FOR NEW IMPROVED...

VARSOL®

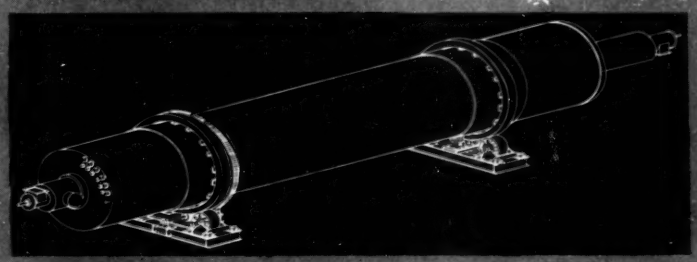


Continuous Atmospheric Rotary Dryer



Continuous Fluidized Bed Dryer

Continuous Solvent Stripper
Continuous Gas Solids Reactor
Continuous Vacuum Dryer



Now, at one convenient location, you can test-dry your materials in a variety of equipment

At General American's East Chicago pilot plant, you can test the drying or reacting of your materials in the widest range of drying equipment ever assembled in one place.

Louisville Dryer engineers will work with you—study your materials and needs, make recommendations for type of equipment, size and heating medium. You can check these recommendations for yourself through practical tests. Your Louisville Dryer is then engineered for most efficient and economical service—built specifically to meet your needs.

To test the drying of your materials in all these different types of drying equipment, call in a Louisville Dryer engineer. There is no cost or obligation.

PROCESS EQUIPMENT DIVISION
GENERAL AMERICAN
TRADE MARK

LOUISVILLE DRYING MACHINERY UNIT
GENERAL AMERICAN TRANSPORTATION CORPORATION

Dryer Sales Office: 139 S. Fourth Street, Louisville 2, Kentucky • Eastern Sales Office: 380 Madison Avenue, New York 17, New York • In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario, Canada
General Offices: 135 South La Salle Street, Chicago 90, Illinois.

NOW AVAILABLE FROM RCI

If methanol is a basic material in your production, you now have an excellent new source of supply. Reichhold has added this very useful solvent and versatile chemical intermediate to its fast growing list of basic chemicals.

When you order RCI Methanol, you can expect a high standard of clarity and purity, for Reichhold uses methanol itself in the organic synthesis of many compounds tailored to exacting specifications.

Why not write Reichhold now for details on shipping points for delivery of RCI Methanol to your plant?

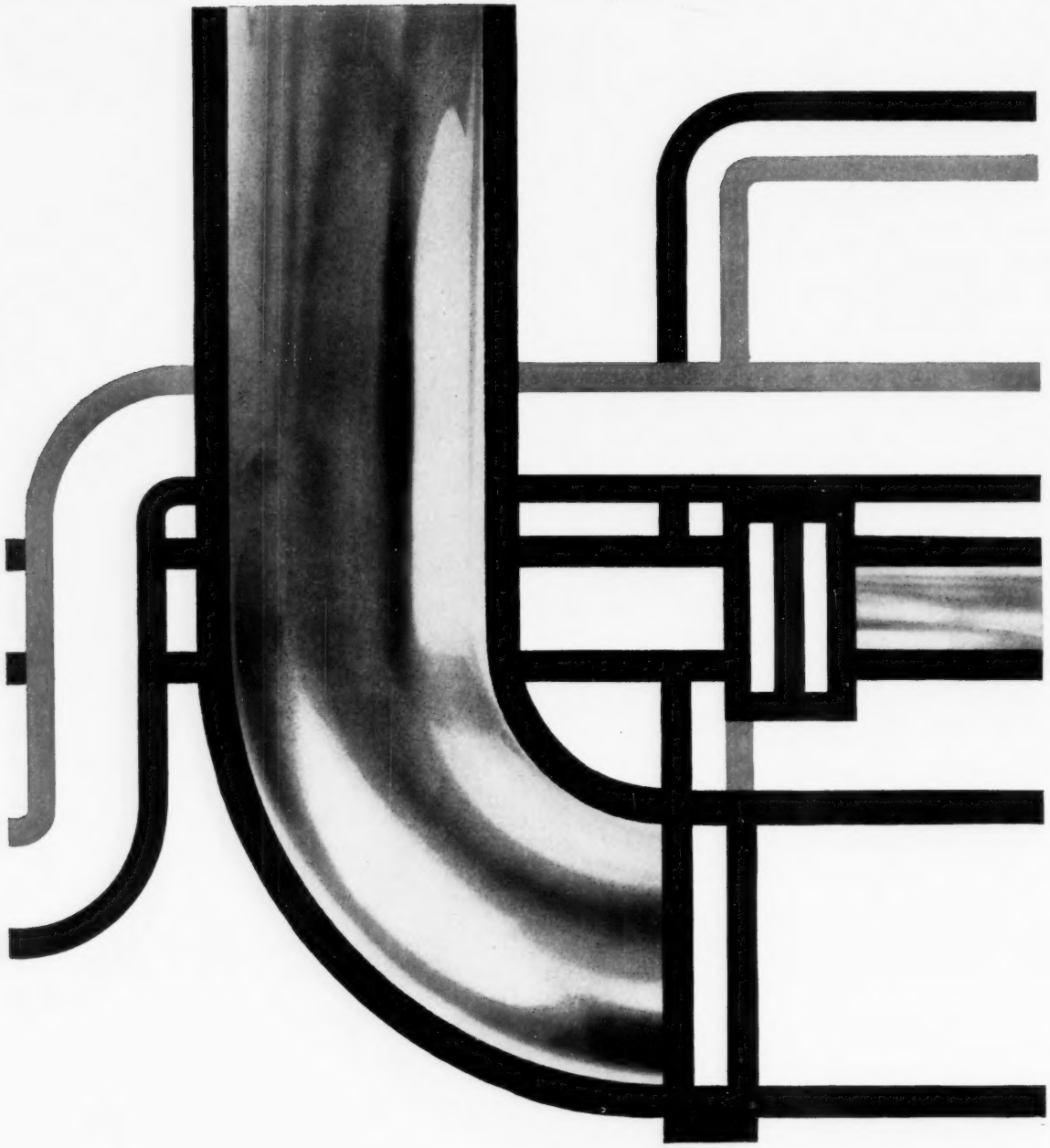
REICHHOLD

Synthetic Resins • Chemical Colors • Industrial Adhesives • Phenol
Hydrochloric Acid • Formaldehyde • Glycerine • Phthalic Anhydride
Maleic Anhydride • Sebacic Acid • Ortho-Phenylphenol • Sodium Sulfite
Pentaerythritol • Pentachlorophenol • Sodium Pentachlorophenate
Sulfuric Acid • Methanol

REICHHOLD CHEMICALS, INC.,
RCI BUILDING, WHITE PLAINS, N. Y.

Creative Chemistry . . . Your Partner in Progress

METHANOL



win the fight against corrosion—with Alcoa Aluminum

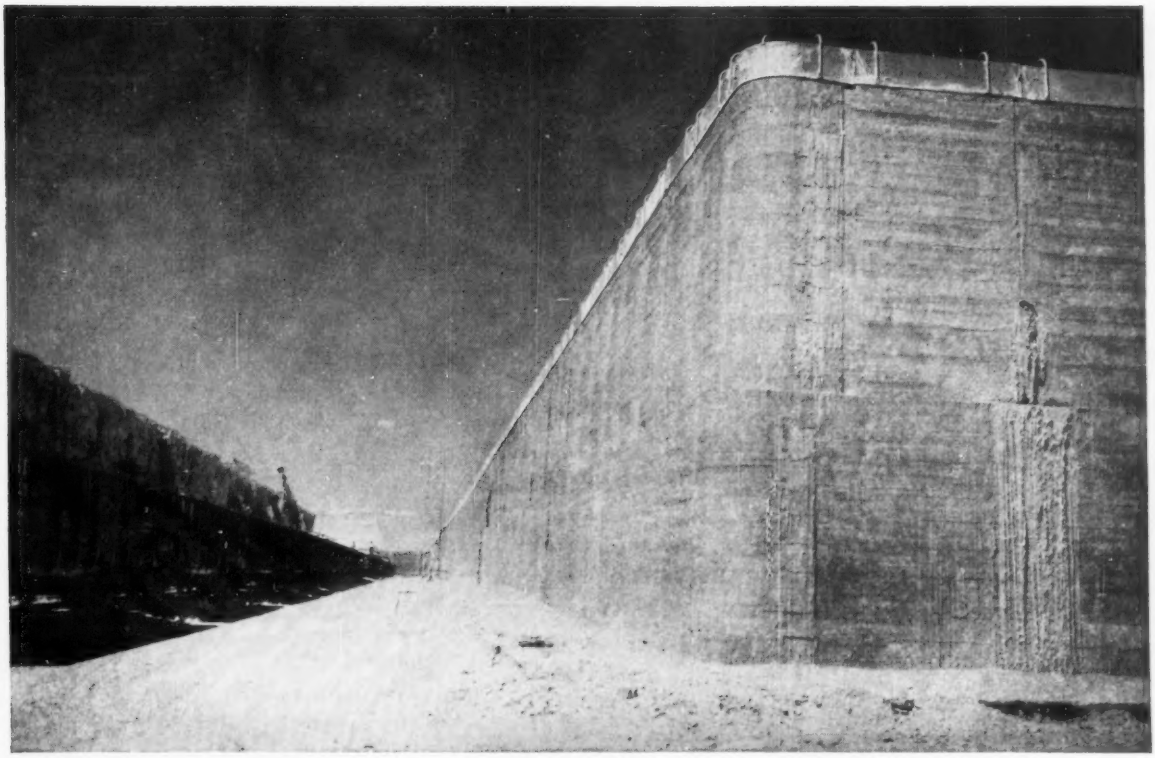
For over 30 years, Alcoa development engineers have successfully employed the outstanding corrosion resistance of aluminum to solve corrosion problems in the process industries. Their unparalleled knowledge of aluminum's behavior in corrosive situations can furnish proved solutions to your most serious corrosion problems. Let Alcoa show you how to *win the fight against corrosion—with Alcoa® Aluminum.* You'll get these extra benefits, too: Light weight • Good workability Low cost • High thermal and electrical conductivity • Great strength in alloys • Non-sparking characteristics • Non-toxicity • Good reflectivity • Clean, attractive appearance.

For immediate help, outline your corrosion problems in a letter to ALUMINUM COMPANY OF AMERICA, 906-E Alcoa Building, Pittsburgh 19, Pennsylvania.

"ALCOA THEATRE"
Exciting Adventure
Alternate Monday Evenings

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Specify Alcoa Aluminum for
corrosion-free Process Equipment
Pipe & Tube
Tanks, Containers, Trucks & Cars
Plant Structures



Stockpiling

...a continuing company policy established years ago

Stockpiling is a measure of service.

The government is stockpiling strategic materials for its long range defense program. Thus, it serves the citizenry. The producer of a raw material who as a company policy stockpiles also serves . . . serves its customers who in turn serve others by being able to count on a supply of the raw material in quantity.

The policy of Texas Gulf Sulphur Company has always been to stockpile . . . always producing *extra* for the future. In spite of the growing demands for the important basic material it produces—Sulphur . . . the company's policy has been to keep on hand stocks equal to about a year's normal demand. With such a supply, it can make shipments, routine or emergency, of any tonnage, at any time, by any method.

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.
811 Rusk Avenue, Houston 2, Texas

Sulphur Producing Units

Newgulf, Texas
Moss Bluff, Texas
Spindletop, Texas
Worland, Wyoming

every size container of

TSP CHLORINATED

is the economy size

WHEN YOU ORDER THE BLOCKSON WAY

Combine your order for Trisodium Phosphate Chlorinated with other BLOCKSON chemicals. Do it the mixed car, mixed truckload way. It's popular with Blockson customers. They cut their costs to the bone and so will you. Write for our catalog.

125 lb. Drum

300 lb. Drum

In a hurry?

Whenever you're in a rush, just phone Joliet 2-6601, collect. Tell us the products and quantities you need. We'll speed your order to you.

100 lb. Bag

To keep production rolling with minimum inventories, use dependable BLOCKSON SERVICE

OLIN MATHIESON CHEMICAL CORPORATION
BLOCKSON

BLOCKSON CHEMICAL COMPANY
Division of Olin Mathieson Chemical Corporation
JOLIET, ILLINOIS
WAREHOUSE STOCKS AT BLOCKSON DISTRIBUTORS

Chemical Week

Wallace F. Traendly ..... Publisher
Sidney D. Kirkpatrick ..... Editorial Director

Howard C. E. Johnson ..... Editor-in-Chief

Ralph R. Schulz ..... Managing Editor
William Olcott ..... Assistant Managing Editor
J. Robert Warren ..... Assistant Managing Editor
Donald P. Burke ..... Associate Editor
Anthony J. Piombino ..... Associate Editor

DEPARTMENTS

Administration ... Cooper R. McCarthy, *editor;* Leo J. Northart
Business News ... Homer Starr, *editor;* Robert L. Porter, Bruce Bendow
Engineering ... Kenneth C. Wilsey, *editor;* Philip A. Untersee
Markets ... Jorma Hyypia, *editor;* Frank S. Sciancalepore
Production ... Herbert C. Short, *editor*
Reports ... Vincent L. Marsilia, *editor*
Research ... Joseph F. Kalina, *editor;* Sanford J. Durst
Sales ... John M. Winton, *editor*
Specialties ... Richard J. Callahan, *editor;* Mary Thompson
Copy .. William Mullinack, *editor;* Henry S. Gordon, John Philbin
Art ... R. D. S. Marshall, *director;* Dolores Able
Buyers' Guide ... Mary C. Folsom, *editor;* E. L. Sisley

REGIONAL EDITORS

Far West Emil J. Mikity, San Francisco
Southwest .... James A. Lee, Houston
Midwest .... T. Peter Forbath, Chicago

NATIONAL AND WORLD NEWS

Economics ... Dexter M. Keezer
Manager, News Bureaus ... John Wilhelm

Atlanta ... Charles T. Dixon
Chicago ... Stewart Ramsey
Cleveland ... William Meldrum
Dallas ... Kemp Anderson, Jr.
Detroit ... Donald MacDonald
Los Angeles ... John H. Kearney
San Francisco ... Margaret Ralston
Seattle ... Ray Bloomberg
Washington .... George B. Bryant, Jr.
Correspondents in 75 principal cities.

Beirut ... O. M. Marashian
Bonn ... Morrie Helitzer
Caracas ... John Pearson
London ... William J. Coughlin
Melbourne ... Alicja Grobtuch
Mexico City ... Peter Weaver
Paris ... Robert E. Farrell
Tokyo ... Sol Sanders
Correspondents in 61 principal cities.

ABP ABC

Robert S. Muller ... Advertising Sales Manager

Business Department ... Alvin J. Babkow, *manager*
Sales Promotion Department ... Fred E. Lesner, *manager*
Market Service Manager ... Margaret J. Swikart
Advertising Makeup ... Robert L. Maier
Advertising Salesmen ... See Adv. Index, p. 80

Paul W. Erb ... Circulation Manager
Frances Regan ... Reprints

MAY 10, 1958 **Vol. 82, No. 19**

Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Co., James H. McGraw (1860-1948), founder. **Executive, Editorial, Circulation and Advertising offices:** McGraw-Hill Building, 330 West 42nd St., New York 36, N. Y. **Publication office:** 3rd & Hunting Park Ave., Philadelphia 40, Pa. See panel below for directions regarding subscriptions or change of address. Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice-President; L. Keith Goodrich, Vice-President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising Sales; A. R. Venezian, Vice-President and Circulation Coordinator.

Subscriptions to Chemical Week are solicited from management men in the Chemical Process Industries in administration, production and plant operation, design and construction, research and development, sales and purchasing. Position and company connection must be indicated on subscription application. Send to address shown in panel below.

United States and United States possessions subscription rate for individuals in the field of the publication, $3 per year; single copies 35¢. Foreign subscription rates per year: Canada $4; other Western Hemisphere countries, $13; all others, $25, payable in advance. Second-class mail privileges authorized at Philadelphia, Pa. Printed in U.S.A.

Title registered in U.S. Patent Office. © Copyright 1958 by McGraw-Hill Publishing Co., Inc. All rights reserved.

Send subscription correspondence and change of address to Fulfillment Manager, Chemical Week, 330 West 42nd St., New York 36, N. Y. Subscribers should notify Fulfillment Manager promptly of any change of address, giving old as well as new address, and including postal zone number, if any. If possible, enclose an address label from recent issue of Chemical Week. Please allow one month for change to become effective.

AMMONIA

By the Push-button Process

Ammonia plant start-up operations are virtually a matter of "push-button" routine with Chemico; for Chemico has designed and constructed more than 50 ammonia plants in the last 40 years.

While new-comers to the field are constantly running into costly difficulties and delays with unreliable and even untried processes, Chemico designed plants are profitably producing an estimated 25% of the world's synthetic ammonia. Investors in the chemical industries may be interested to learn that despite the proven performance and countless advantages of Chemico's ammonia processes, it frequently costs less to build a Chemico Plant.

Write today for Chemico Bulletin #357 which lists the alternate feed stocks and methods for gas purification and production in the making of ammonia.

CHEMICO

CHEMICAL CONSTRUCTION CORPORATION
525 West 43rd Street, New York 36, New York

CHICAGO • DALLAS • HOUSTON • PORTLAND, ORE. • TORONTO • LONDON • PARIS • JOHANNESBURG • TOKYO

The lighter side of paint . . . of paint manufacturing, that is . . . is no joke. It's sometimes tougher than our painter's job of trying to match milady's big blue eyes.

In trade sales color systems that need unvarying white bases, and for other products (such as industrial tints) that need lightness of color plus hiding and durability, TITANOX* white pigments will lighten the burden of your pigmentation problems. In fact, TITANOX is the number one choice in titanium dioxide for *anything* that needs white pigment—paints, rubber and plastics, paper or ceramics. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities.

5719-A

TITANIUM PIGMENT CORPORATION

Subsidiary of NATIONAL LEAD COMPANY

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.

Tri-Sure Plant at Sao Bernardo Do Campo, Estado de Sao Paulo, Brazil

Tri-Sure® Plant in Brazil

gives South American shippers the security of *Tri-Sure*® *Closures on drums and pails*

The modern Tri-Sure* plant in Sao Paulo, Brazil, brings to petroleum, chemical, food and other shippers in drums and pails the advantages of Tri-Sure protection.

The plant is now producing Tri-Sure Flanges, Steel Plugs, Zinc Plugs, Tab-Seals, flange insertion dies and tools for drum closures, Tri-Sure Straight Reversible Spout Assemblies for pails, and dies for 55MM openings in light containers.

Ideally located for sales-engineering service to Tri-Sure closure users, the Sao Paulo plant has become a strong link in "Tri-Sure the World Over," teaming up with nine other Tri-Sure plants and affiliates in providing *quality protection* for *quality products.*

Wherever your plant is located, there is a Tri-Sure plant to serve you. And wherever your products are shipped, there are Tri-Sure Closures that will exactly meet their needs. Send for full details on the complete Tri-Sure line.

Always specify

Tri-Sure

Reg. U. S. Pat. Off.

CLOSURES

*The "Tri-Sure" Trademark is a mark of reliability backed by over 35 years serving industry.

AMERICAN FLANGE & MANUFACTURING CO. INC., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

CHICAGO, ILL. · LINDEN, N. J. · NILES, OHIO

Tri-Sure Products Limited, St. Catharines, Ontario, Canada
Tri-Sure S/A Indústria e Comércio, Sao Bernardo Do Campo, Estado de Sao Paulo, Brazil
American Flange & Manufacturing Co. Inc., Villawood, N. S. W., Australia
Compañia Mexicana Tri-Sure S/A, Naucalpan, E. de Mexico, Mexico
B. Van Leer N. V., Stadhouderskade 6, Amsterdam, Holland
Van Leer Industries, Ltd., Seymour House, 17 Waterloo Place, Pall Mall S. W. I, London, England

How the plastics, plasticizer, rubber and chemical industries

BENEFIT TWO WAYS *by specifying* NATIONAL® ADIPIC ACID

Major basic production and uniformly high quality are the two big reasons so many users of this versatile dicarboxylic acid have made National Aniline their preferred supplier.

Our non-captive production at Hopewell, Va. is integrated right back to basic raw materials within the Allied Chemical group. Our process is efficient, direct, continuous and under automatic-instrument control.

Our quality has been found outstandingly good: Strength 99.8% minimum. Moisture 0.2% maximum with iron and volatile acids way down in the low ppm.

So that you can evaluate National Adipic Acid in your own application, we will be glad to send a liberal working sample and to quote on your needs.

Write also for TECHNICAL BULLETIN I-12R

This 36-page technical bulletin on National Adipic Acid gives physical and chemical properties; principal reactions of the carboxyl and alpha methylene groups; solubility curve, and suggested uses with copious literature references.

Allied Chemical

NATIONAL ANILINE DIVISION ALLIED CHEMICAL CORPORATION • 40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles New Orleans Philadelphia Portland, Ore. Providence San Francisco Toronto

Business
Newsletter

CHEMICAL WEEK
May 10, 1958

Things are popping fast in chemical metals this week:

• Stauffer Chemical is planning to sell its big titanium tetrachloride plant at Ashtabula, Ohio, which has been on stand-by since it was completed last December. It was expected that either National Distillers & Chemical or its one-third-owned subsidiary, Mallory-Sharon, would take the plant over by midsummer.

• Kennecott Copper will buy American Smelting & Refining Co.'s Garfield copper smelter (near Salt Lake City) for $20 million in cash. Included in the Kennecott-ASARCO transaction: inventories, adjacent real estate, and "certain other assets." Title transfer is set for next Jan. 2.

• Mallory-Sharon Metals Corp. last week bought Johnston & Funk Titanium Corp. (Wooster, Ohio)—producer of zirconium and titanium wire—for an undisclosed amount of cash.

•

Schering Corp. will broaden its line of proprietary drugs. President Francis Brown last week told the New York Society of Security Analysts his company, until now chiefly a producer of ethical drugs, is now constructing a new laboratory and testing area for vitamins and veterinary antibiotics.

Brown said the company's recent merger with White Laboratories provided Schering with an outlet for retail distribution and the opportunity to handle the new products.

With the White acquisition, said Brown, Schering hopes to put several other ethical products into over-the-counter sales.

•

The Navy last week awarded Callery Chemical Co. a $3.13-million contract for operating high-energy liquid fuels plant at Muskogee, Okla. Production of fuels for missiles and jet aircraft is slated to begin early next year. Callery built the plant last year under a $38-million Navy contract.

•

Mexican Gulf Sulphur Co. has gone out of business. The firm closed when its sulfur reserves ran out and it was unable to acquire new deposits near its San Cristobal plant.

To cover part of its $5-million debt to the Export-Import Bank, assets of Mexican Gulf's operating subsidiary, Cia. Azufrera Mexicana, have been foreclosed and sold for $2.5 million to Nacional Financiera S.A., a Mexican government agency. They include a Frasch process sulfur plant, marine equipment, and the capital stock of its subsidiary, Cia. Industrial Del Istmo, S.A.

Mexican Gulf says that all small creditors were paid, and that the debt to a group holding $750,000 in second-series secured notes was discharged by foreclosing Mexican Gulf tideland royalty interests. But about 3,300 holders of 1 million shares of common stock (10¢ par value) and a group holding $1.7 million in unsecured first-series notes could not be repaid.

•

G. D. Searle & Co.'s move last week to organize a new subsidiary —Searle Chemicals, Inc.—reflects the firm's keen interest in steroid hormones. The new company's major efforts at present "will be devoted to sales of bulk steroid intermediates used in manufacture of many ethical drugs in the rapidly advancing field of steroid chemistry." Earlier this year, Searle acquired Root Chemicals Inc., a basic producer of diosgenin—which is the starting material for progesterone and other steroid intermediates (*CW, Feb. 22, p. 34*).

•

Drops in first-quarter profits are reported this week by numerous concerns in the chemical process industries:

Food Machinery and Chemical Corp. netted $3.3 million while sales shrank 13%, to $67.5 million. Minnesota Mining & Mfg. Co. cleared $7.97 million on an $85.2-million sales volume that was 5% less than last year's first-quarter sales. For both firms, earnings were down 18%.

Harshaw Chemical Co. had only a 1.6% decline in sales revenue over the first six months of its Sept. 30 fiscal year, but net income slumped 32%, to $772,103. Six months' sales total: $31.7 million.

Johnson & Johnson's first-quarter sales dipped 1%, to $64.8 million, but net earnings sagged 7%, to $3.1 million.

•

A decision on the fate of General Aniline & Film Corp. should come between now and June. The U.S. Supreme Court last week heard arguments on the appeal made by the Swiss holding company Interhandel, which has been trying to get back the big chemical firm since 1948.

Issue is whether Interhandel's suit for return was properly dismissed when Interhandel was not able—because of Swiss corporate secrecy laws—to produce all documents requested by the trial court. The Office of Alien Property has held up its proposed public sale of GAF, pending the high court's ruling.

Presumably, a court decision for the government would eliminate the last legal barrier to sale of GAF. A ruling for Interhandel, on the other hand, would put the case back into the lower courts for argument on the issue of whether Interhandel actually was a cloak for the German I.G. Farbenindustrie.

for immediate delivery:

new Dravo 3200 h.p. towboat ideal for high speed integrated chemical tows

Designed with an eye toward more efficient high-speed integrated chemical tows, the third 148-foot Dravo "3200" towboat is available for immediate delivery.

Reasons why this towboat should be considered for immediate purchase can be summed up in one key phrase: **Profit-making performance at a competitive price.**

Profit-making performance, the hallmark of Dravo towboats, means a combination of speed, versatility and efficient operation. The first five months operations of the *Sally Polk*, Dravo's first 3200-class towboat, give a clue as to what can be expected of the Dravo-3200.

Canal Barge Company, Inc., her operators, report that the *Sally Polk* has lived up to all expectations and has, in actual operation equalled or bettered all trial run figures.

(During trial run tests, the *Sally Polk* averaged 12.9 mph over a one mile course, up and down river, while pushing an 8500-ton tow.)

Although Canal Barge has not run any conclusive tests of their own, the *Sally Polk* has, during routine operation, performed in a very respectable manner:

Pushing an 8500-ton integrated tow, the *Sally Polk* averaged 11 mph pool speed over a 47-hour period.

Pushing a 17,200 ton 100-foot wide tow, the *Sally Polk* averaged 9 mph pool speed over a short distance.

To operators moving chemicals on the rivers, a "3200" towboat can mean faster, more efficient high speed integrated tows. It can mean better towboat and barge utilization. It can mean higher profits.

A "3200" towboat means *profit-making performance.*

The price is competitive.

The delivery is immediate.

The towboat is Dravo.

FOR MORE INFORMATION: Write or call C. J. Donoghue, Dravo Corporation, Pittsburgh 25, Pa., SPalding 1-1200.

DRAVO
CORPORATION

HOW YOU CAN MAKE THEM SAY "HOT DOG!"

When it's barbecue time anywhere it's time for the whole family to enjoy an old American favorite—hot dogs. And father, mother, and kids will all want more when your frankfurters are flavor-enhanced with Huron* MSG, the monosodium glutamate derived from wheat. MSG not only helps bring out the delicious flavor but also locks it in so your franks will always have that "just made" taste.

Most meat products, frosted foods, soups, and canned foods are more flavorful with MSG. With no flavor of its own, MSG bolsters the characteristic savor of each ingredient, making the whole a more tempting dish. For complete technical information on MSG and other Hercules products for the food industry, write:

*Hercules Trademark

HURON* **MSG** HURON MILLING DIVISION

VH58-4

Virginia Cellulose Department **HERCULES POWDER COMPANY** INCORPORATED *Wilmington 99, Delaware*

MANUFACTURERS OF AGE-IT® AND HVP®; WHEAT GLUTEN AND WHEAT STARCH

Rain, Not Recession, Crimps Ag Chem Sales

It isn't the recession, it's the humidity. That's what agricultural-chemical executives are saying this week, by way of explaining to stockholders that cold, wet weather was the big reason their companies' sales and profits were down in the past quarter.

But the industry is not alarmed. It is confident that the losses inflicted by wayward weather will be offset.

Bolstering that confidence is a new U.S. Department of Agriculture report stating that consumers—despite a 1% drop in their disposable income—spent more for food during the first quarter of this year than in any previous three-month period.

Retail cost of USDA's market basket of farm foods—an index of the average quantity of foods bought by urban families—reached an annual rate of $1,054 in the January-March period. That's about 6% higher than last year's first-quarter food-consumption figure.

Farmers will receive about 75% of the December-to-March increase in consumers' expenditures for food. So makers of fertilizers and pesticides—who aren't hurt too badly by recessions anyway—should find their customers in an unusually good cash position. Farmers should also be in a good frame of mind to invest money in chemicals for this year's crops.

Examples of how February and March blizzards and rainstorms caused farmers to defer their field work: Although International Minerals & Chemical Corp.'s nine-month sales were down by less than 3%, its January-March sales were 13% less than in the corresponding quarter last year. Spencer Chemical Co. found first-quarter business even slower, with sales down by 33%. Both companies blamed these declines on "extremely cold, wet weather."

But both report that business has picked up well in the current quarter. And for a chins-up view of prospects for the farm chemicals industry as a whole, see article at right.

CW PHOTO—LIONEL CRAWFORD

At CW conference*, farm chemical company chiefs with CW editors.

Experts See Sunny Outlook

By his determined stand against the dairy bloc's latest price-support plan, Secretary of Agriculture Ezra Taft Benson again last week pushed hard to get the government out of farming.

But the stand-off between Benson and his critics indicates no significant change in basic U.S. farm policy for the rest of President Eisenhower's second term. What then is the outlook for the country's agricultural chemicals industry?

For expert opinion, *CW* put the question and some of its ramifications to a panel of these industry executives: Vice President S. H. Bear, Niagara Chemical Division, Food Machinery and Chemical Corp.; consultant Fred Hatch, former president, National Agricultural Chemicals Assn. and formerly head of Shell's agricultural chemicals department; Vice President and General Manager Daniel Keating, Agricultural Chemicals Division, Stauffer Chemical Co.; and Secretary-Treasurer Hughs Mayo, American Agricultural Chemical Co.

Here are the panel's tape-recorded replies:

Question: How do you people in the agricultural chemicals industry view the current controversy over Secretary of Agriculture Benson's attempts to reduce government influence in farming economics?

Answer: It's a little difficult, in my opinion, to correlate the agricultural chemicals business with Benson's over-all farm policy, which is primarily concerned with the so-called basic crops—wheat, cotton, corn, tobacco, etc. These crops are important to our industry, but they do not necessarily represent our largest markets in terms of penetration and dollar volume sales. And farm prices are not the primary influence on our sales.

Q.: Still, the price-support and soil-bank programs must have quite a bit

*Left to right: Hatch, *CW* Managing Editor Ralph Schulz, Mayo, Bear, *CW* Editor John Winton, *CW* Editor-in-Chief Howard Johnson, and Arthur Kraft of *CW*'s Washington News Bureau. Not shown: Keating, *CW* Editors Homer Starr, Robert Porter.

to do with the acreage that is planted and the intensity of cultivation. Don't these affect the demand for fertilizers and pesticides?

A.: The mere fact that we have acreage restrictions works in the reverse direction from what you might expect, in that farmers whose acreage has been restricted, frequently intensify their agricultural operations and increase their use of our products; so that we have seen very little direct effect on total consumption, for example, of cotton insecticides, as a result of acreage restrictions.

Q.: So it's often a matter of using more insecticide per acre on fewer acres under cultivation?

A.: That's right; and what happens to "marginal producers" is obvious. The small, inefficient farmer who never used pesticides or fertilizers anyway is put out of production.

Q.: But doesn't the soil bank put money into farmers' pockets, enabling them to buy agricultural chemicals? What about the reports we've seen of thousand-dollar checks being mailed to farmers under this program?

A.: They must buy Cadillacs with those checks. Our principal markets —fruit and vegetable farms—are not affected by Benson's policies.

Q.: Suppose that, over the next few years, Benson were to succeed in getting away from subsidies and price supports altogether—would that affect your business much?

A.: Favorably, yes. I think it would be one of the healthiest things that ever happened. It would get all the moonlight farmers and speculators off the cotton fields and wheat fields and put the honest-to-God, hard-working farmer back in business again. But let me tell you, it's not a simple matter. I don't believe the country could stand the shock of suddenly stopping all government farm programs.

Q.: Has the freeze in Florida earlier this year cut your business?

A.: Temporarily, yes. But I think that freeze was really a blessing in disguise. Florida farmers were already into over-production, and now they'll take better care of what they have left. And this will help them get out from under the burden of marginal producers—people who retired, went to Florida and have been trying to grow citrus on lands that a good citrus grower wouldn't be caught dead on.

Q.: Will the recession tend to push marginal farms out of production?

A.: Not necessarily. Some marginal farmers will feel more secure on their little farms where they can grow at least some of the food they need; and subsidies and price supports tend to encourage inefficient producers to stay on their farms.

Q.: What is your industry's long-range market potential? In other words, if farm acreage remains relatively constant for, say, 10 years, how much more agricultural chemicals could you sell?

A.: I would say that farm technology is a long way ahead of common practice. We can prove, for example, that it would pay every dairy farmer in western New York state to spray his hayfield with pesticide to control insects; but only a very small percentage of those farmers are doing it. So here's a tremendous market we haven't scratched yet. We have had these farm surpluses and it just hasn't been necessary to farm as efficiently as possible. But as our population grows and increased production per acre becomes necessary, all we have to do is sell the farmers on the technology we already have, and we'll be able to support a population on the order of 2 billion, or so.

Q.: Isn't the time coming when corporate farming will be an economic necessity?

A.: It may not be corporate farming, but it will be industrial farming. And with our present tax structure, the trend will be in the direction of corporate farming—there's no way to avoid it.

Q.: Do you think we'll see much of an increase in contract farming?

A.: In poultry raising, the trend is going almost 100% that way. And the practice is spreading to hog raising, to some extent, in the Midwest.

Q.: What does this trend mean for agricultural chemicals?

A.: I would say it's a favorable trend; it would increase our total potential market.

Q.: Will the trend to larger farming units make direct selling to farmers a good deal more practical than it is now?

A.: There's no doubt but that this will be the result. We can see it now. Bigger operators—like Minute Maid in Florida and Seabrook Farms in Georgia, to name two—all buy direct from the manufacturer.

Q.: Will this reduce your credit problems?

A.: We hope it will reduce the time our accounts are in a receivable state.

Q.: Is that an important problem in your industry?

A.: It certainly is. The farmer is very honest. He's going to pay, all right, but he can't understand "net 30 days." He'll pay when he gets his crop in. As farming goes more and more on a business-like basis, we'll certainly collect our money faster.

Q.: Are you worried about how the growth of synthetic fibers may affect your market for cotton pesticides?

A.: Cotton producers are worried because the high support price has made it possible for synthetic fibers to move in on their markets. In accepting the price support program, they've endangered their own markets.

Q.: What is the significance of the gypsy moth mass spraying lawsuit for your industry?

A.: I think it shows that when mass spraying is needed, it should be preceded by an adequate educational program to inform the public as to the necessity and desirability of the project.

Q.: How much do the pesticide manufacturers get out of mass spraying programs?

A.: It all depends on the kind of terrain and the products needed, but in general, application costs usually are much higher than the cost of the chemicals. In forestry spraying, you'd pay about 20¢ per acre for the DDT and about 60¢ for the application; in Western grasshopper spraying, the total cost is about 50¢ acre, of which 5¢ is for chemicals. Over-all, the average cost of chemicals would be only one-eighth or one-tenth of the cost.

Q.: By way of summing up, why is it that you people are so optimistic about the future for your agricultural chemicals industry?

A.: The main reason is that we now have only about 35-40% market penetration; and as the population grows and the demand for foods and fibers increase, the use of our materials will increase along with it.

We in the agricultural chemicals business are natural optimists; all we can see ahead is growth of our sales. We only hope we live long enough to see our business grow more profitable, too.

Compromise on Chlorides

Managers of chemical process firms on the Ohio River and its tributaries will soon be seeing the new chloride-waste control plan now being mailed out by the eight-state* Ohio River Valley Water Sanitation Commission.

ORSANCO tentatively proposes that all plants pouring "significant quantities" of chloride into the river and its tributaries provide storage facilities big enough to store the wastes for three months. Plants could then synchronize discharges with changing river levels; they would hold back heavy discharges at low ebb.

The plan was presented last week at the commission's quarterly meeting at Hardin, Ky. A final commission recommendation was deferred until the Sept. 12 meeting to give industry time to offer its own suggestions.

A patrol system to check all types of pollution was proposed at the meeting by ORSANCO's executive director and chief engineer, Edward Cleary. It would spot-check obvious sources of offense, allowing states to act "before complaints reach them from the public." Chief target for the unannounced observations would be the "current dissatisfying aspect" of oil and other visible discharges.

The new chloride-control plan resolves many of the criticisms leveled at the earlier ORSANCO staff plan for "proportionate discharge" (*CW, Jan. 11, p. 20*). This would have allotted discharge rights on the basis of stream flow in each tributary. Plants on the heavy-flow streams could discharge more chloride than those on streams with lighter flow. Maximum river pollution allowed at any time would have been 250 ppm., with the monthly average not to exceed 125.

The staff plan died in committee under a barrage of industry criticism. The main points: that raw materials factors, etc., may draw big plants with heavy wastes to small streams, making arbitrary pollution levels unrealistic and economically unwise; that the need for chloride pollution control was questionable anyway.

The special committee which met last January to pass on the staff plan decided to let the problem ride until last week's full commission meeting in Hardin, Ky. By this time, advisory committees from the chemical and steel industries had agreed that chloride control was needed.

The crux of the new plan has already been put into practice at Columbia-Southern Chemical Co.'s Barberton, O., plant. Under agreements with ORSANCO and Ohio, the firm built a six-months-capacity waste impounding reservoir.

Will the commission finally clear the plan when it meets in September? ORSANCO's executive director, Edward Cleary, tells *CW*, "I think they are favorable to it. It sets no numerical concentration standards, and no control points."

Process firms throughout the U.S. have a stake in the commission's decision. It will set a pattern for action in other areas now worrying about water pollution.

*Ill., Ind., Ky., N.Y., O., Va., Penn., W. Va.

UNITED PRESS

Clearing the Road for a Giant

To make way for this nuclear reactor container, engineers demolished the railroad overpass near Benton Harbor, Mich. The stainless steel vessel—said to be the largest single object ever shipped by rail—measures 40 ft. long, 21 ft. high, 14 ft. wide, was built by Combustion Engineering at Chattanooga, Tenn.

It's headed for Power Reactor Development Co.'s Enrico Fermi power station (Monroe, Mich.), where it will house the reactor's uranium fuel core. The sodium-cooled, fast-breeder reactor is slated to "go critical" in '60, generating 300,000 kw. of steam, which will be converted into 150,000 kw. of electricity by Detroit Edison.

Pickup For Potash?

Potash Company of America Vice-President Fred Davis last week denied reports that the potash industry is suffering from alarming overcapacity and high inventories. In a talk to the San Francisco Society of Security Analysts, Davis said inventories, while relatively high, will be largely sold off in May and June—the normal peak months.

Queried on plans for PCA's new Canadian properties (*CW, June 1, '57, p. 27*), Davis said the company's $20-million facility in Saskatoon will be operating by the end of '58 and in full production by Feb. '59. He estimates that up to two-thirds of the 600,000 tons of muriate potash that the Saskatoon plant expects to turn out next year will be exported.

Escambia Still Abuilding

National Research Corp. last week decided to dispose of its interest in Escambia Chemical Corp. (Pensacola, Fla.) to Electric Bond & Share and United Gas Co.—NRC's former partners in the Escambia venture. But the sale doesn't signal any slowdown in expansion plans for the three-year-old Florida firm.

NRC reports it's pulling out to concentrate more on high-vacuum metallurgy projects and production of rare metals. It feels it has a "unique position" in these projects through its interest in Leybold-Hochvakuum-Anlagen GmbH—a German high-vacuum equipment maker—and Columbia-National, a zirconium producing company near Escambia's Pensacola complex.

Until now, NRC has done all the research for Escambia, a maker of basic chemicals. It worked on process patents five years before the company was formed. And when Escambia was incorporated, NRC bought a 10% interest with money borrowed from its partners. But since the young firm hasn't started paying dividends yet, interest on the loan was coming out of NRC's cash drawer. This drain on its working capital—plus the fact that Escambia will open up its own research lab in Wilton, Conn., this summer (*CW, May 18, '57 p. 90*)—undoubtedly influenced NRC's decision to sell.

Escambia's Haslanger finds plenty of room for expansion.

Partners Optimistic: The remaining partners, each now with a 50% interest, are better able to wait out Escambia's startup period. Parent company executives, in exclusive interviews last week, revealed they're "well satisfied with Escambia's progress" and will continue a vigorous program to expand the company.

First step in the expansion program, reports Escambia President Robert Haslanger, will probably be a new plant to produce methacrylic acid. Plans aren't definite yet, but the plant would logically be built on part of the 2,100 acres of industrial sites Escambia now owns in Pensacola. Haslanger indicated a green light for the new unit might come early in '59.

Haslanger didn't elaborate on other planned expansions. But he pointed out that only 400 of Escambia's 2,100 acres of real estate are now being used. Part of those remaining will be taken up by the company's growth program and the rest could be sold.

Chemical firms already located nearby include Heyden Newport, American Cyanamid, Chemstrand and Columbia-National.

Financing for Escambia's new ventures will come, for the time being at least, from the parent companies.

COMPANIES

Food Machinery & Chemical Corp.'s new Geneva office will coordinate Western European sales activities for packaging machinery, paper converting equipment and related lines, be a liaison office for the corporation's European subsidiaries and affiliates, and serve as a listening post on common market developments.

•

Sunray Mid-Continent Co. (Tulsa, Okla.) will merge with Suntide Refining Co. (Corpus Christi, Tex.) next September, if stockholders approve. Sunray already owns about 50% of Suntide's stock, would exchange one share of its own common stock for four shares of Suntide common. Suntide was formed in '52, last year averaged a through-put of 49,000 bbls./day at its 65,000 bbl./day refinery in Corpus Christi.

EXPANSION

Paper: Blandin Paper Co. (Grand Rapids, Mich.) will build a $1.5 million addition to its magazine paper plant to house a coating machine.

•

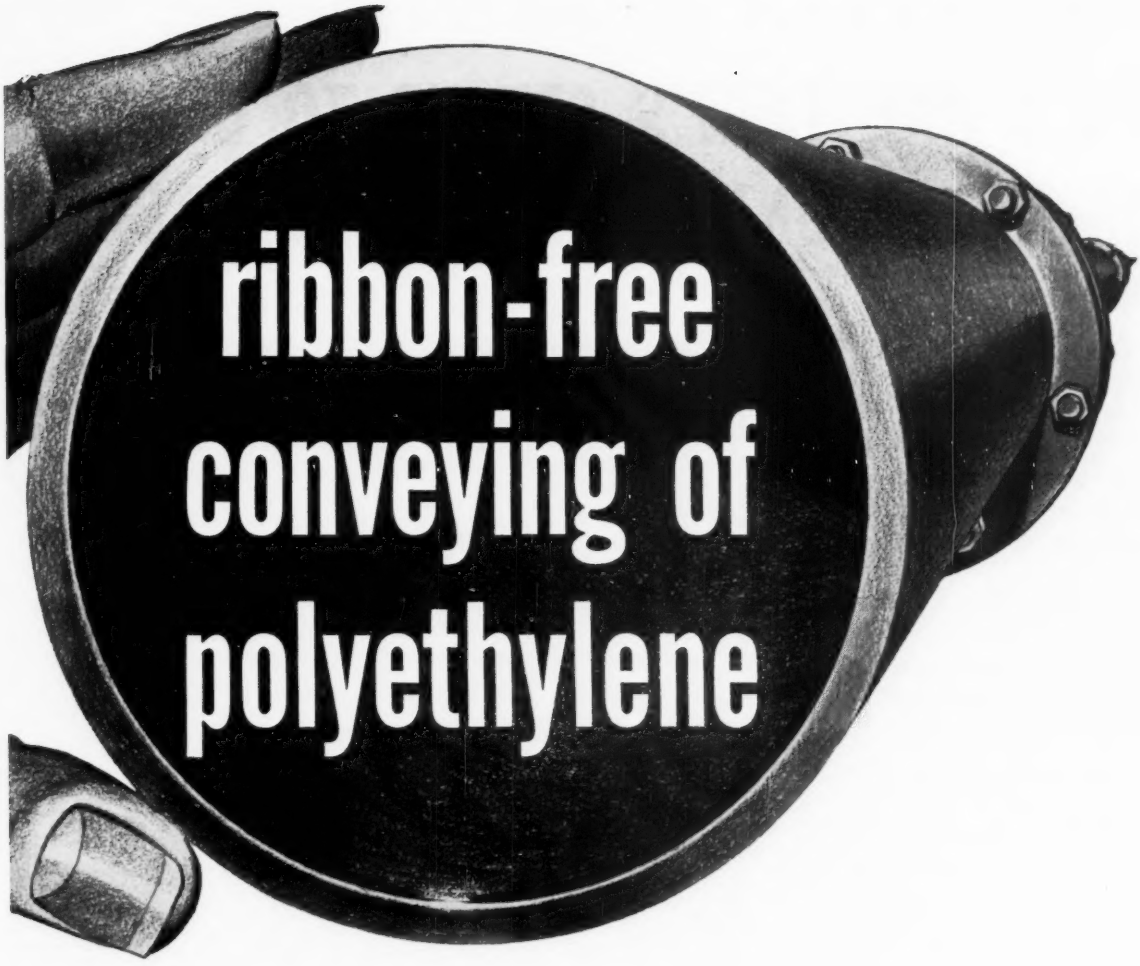
Rocket Engines: Thiokol Chemical Corp. will open bids on May 21 for a $3-million construction program at its Longhorn Ordnance Works (Marshall, Tex.). The added facilities will handle production of Nike-Hercules rocket engines.

FOREIGN

Synthetic Rubber/India: The Heavy Industries Ministry reports that an undisclosed West German-French combine has offered to set up a 20,000-tons/year synthetic rubber plant in the new Nahorkatiya (East India) oil regions. The combine would advance $16.8 million in foreign exchange toward an estimated total outlay of $26 million. The plant would go onstream in 3½ years, would revert to the Indian government in seven to 10 years. Last year the government shelved a rubber plant project because of the foreign reserve shortage.

•

Plastics/England: Britain's plastics output so far in '58 is 10% higher than in the same period last year, according to a *Financial Times* survey, and probably will show the same rate of increase throughout the year. The increase represents something of a leveling-off from the 17% rise in '57. Total plastics output last year was almost 400,000 tons, worth $308 million. First-quarter exports are up 9% this year, compared to the same period in '57.



New, patented feature of *Airstream* Conveyors

Now Dracco Airstream Conveyors offer you an exclusive feature which eliminates the formation of "ribbons" or "streamers" on pipeline walls in the pneumatic handling of polyethylene and similar plastics.

A special Dracco patented treatment* prevents the linear build-up of polyethylene which occurs in untreated conveying lines. This unique development assures unrestricted material flow and avoids the fouling of extruders, injectors and other production machinery.

Ribbon-free polyethylene conveying is an important addition to the many other advantages of Airstream Conveyors:

- any degree of automation
- contamination-free handling with completely enclosed, air-tight systems
- conveying air can be purified by filtration and drying
- optional controlled atmosphere systems using inert gases
- self-cleaning . . . dust-free
- no moving parts . . . no metal-to-metal contact
- stainless steel or aluminum construction

To be sure of efficient and economical handling of polyethylene—or any high-purity bulk material—specify Dracco Airstream Conveyors . . . now available with the new **ribbon-free** feature.

*U.S. Patent No. 2,784,038

DRACCO DIVISION OF FULLER CO.
4080 East 116th Street • Cleveland 5, Ohio

New 32-page brochure presents detailed information on how Dracco Airstream Conveyors have solved bulk materials handling problems. Write for Bulletin 530.

DRACCO *airstream* conveyors
dust control equipment

CHECK POINTS FOR CHOOSING AN ENGINEERING FIRM—

PICK ONE THAT'S SET UP TO OPERATE IN THE COUNTRY WHERE YOU'LL BUILD

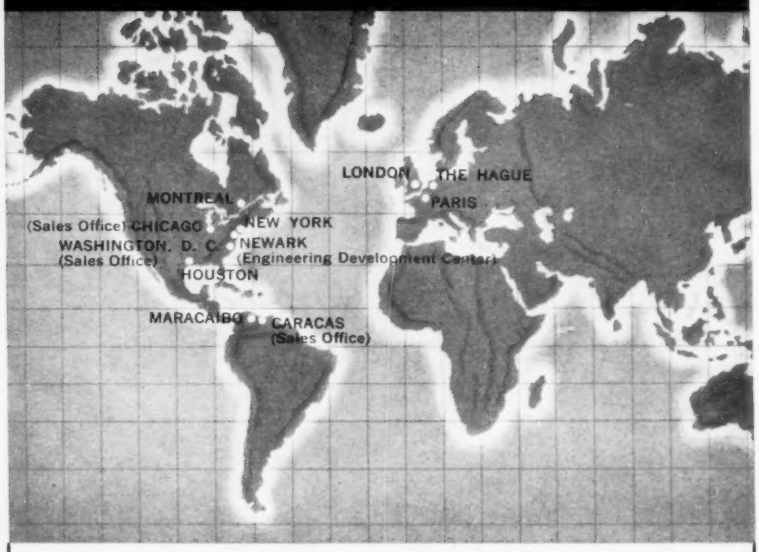
Choose a firm with a world-wide organization — one staffed, equipped and experienced to cope with the local situation wherever you plan to construct your new chemical plant, petrochemical plant or petroleum refinery.

Lummus' staff of highly trained employees is located in seven engineering offices throughout the world. This brings five advantages to Lummus customers:

(1) Lummus is set up to operate with local currencies, can arrange payment to suit the customer's desires. (2) Purchasing is world-wide, takes advantage of local conditions. (3) Construction proceeds smoothly to on-time completion because Lummus is expert in training local working people and using local sub-contractors all over the world. (4) Lummus keeps up to date on technical developments everywhere in the world. And (5), each Lummus office can draw on the technical experience and planning ability of all the other offices.

Call in Lummus when you begin plans for your next plant.

LUMMUS' WORLD-WIDE, WORLD-WISE ORGANIZATION



ABOVE — Location of Lummus offices and subsidiaries around the globe

BELOW — A few of the far-flung projects designed and constructed by Lummus

CHEMICAL PLANTS

Project	Location
Tetramer, Cumene and Phenol-Acetone Units, Societe des Chimiques des Derives du Petrole	Antwerp, Belgium
Sulfuric Acid Plant, Inland Chemicals Canada Limited	Fort Saskatchewan, Alberta, Canada
High Pressure Acetylene Chemicals Plant, General Aniline & Film Corp.	Calvert City, Kentucky, U.S.A.
Phenol-Acetone Plant, Progil-Electrochimie	Pont de Claix, France
Ethylene Oxide Plant for Petrochemicals Ltd.	Partington, England

COMPLETE REFINERIES

Irish Refining Co., Ltd.	Cork, Ireland
Burmah-Shell Oil Company	Bombay, India
Societe Generale des Huiles de Petrole	Dunkirk, France
Compañia Shell de Venezuela	Cardon, Venezuela
Standard Oil Company (Indiana)	Mandan, North Dakota, U.S.A.

LUMMUS

THE LUMMUS COMPANY, 385 MADISON AVENUE, NEW YORK 17, N.Y.

WASHINGTON, D.C. • CHICAGO • HOUSTON • MONTREAL • CARACAS • MARACAIBO • LONDON • PARIS • THE HAGUE

Washington
Newsletter

CHEMICAL WEEK
May 10, 1958

Inventory buying is stepping up in the chemical industry. Liquidation has reached a low, and an increase in buying for the rest of the year is in prospect. This is the conclusion of the economic advisors to the 50-member Commerce Dept. Business Advisory Council, which gathered this week at Hot Springs, Va. This is a significant projection. Last week the government's own statistics showed a continuing liquidation among industry, generally.

Even the depressed steel industry—whose regular customers have largely been living off inventory—will get new business later in the year, according to the economists. They see inventories inadequate for the October-December quarter, so they expect new buying of steel goods in the fall.

The economists note continuing softness in capital expansion. The view that is being presented at Hot Springs is this: over-all, the nation has enough productive capacity—with new plants now going in—to take care of needs for five years. Further increases in spending will go for modernization, for development of new products, and for research.

•

A revival of fast tax amortization for plant and equipment is one of the new antirecession tax measures getting a lot of attention and support in Congress.

This kind of legislation—tax reform as opposed to substantial tax cuts—could be passed if the ideas aren't too controversial and if it's agreed that they would help a dragging area of the economy. Eisenhower, for instance, has shown what amounts to a favorable interest in such measures, compared with his stiff opposition to a general tax cut.

Hottest prospect is Senator Capehart's (R., Ind.) bill giving faster tax write-offs to all business for its investment in plant and equipment during the 18 months beginning January '58. The theory is simple: by allowing the larger deductions for amortization, a firm reduces its tax bill and winds up with more cash to spend for business purposes.

The proposal is winning support now, particularly because capital investment is one of the soft spots of the economy. Capehart says his bill would result in tax savings of $600 million to $1 billion/year.

Here's how Capehart's idea would work:

First, you'd be allowed to double the usual annual deduction on plant or equipment that now must be written off over a 15-year period or less. For investments with more than a 15-year tax life, you would cut by one-half up to 15 years and get a two-thirds reduction on the remainder.

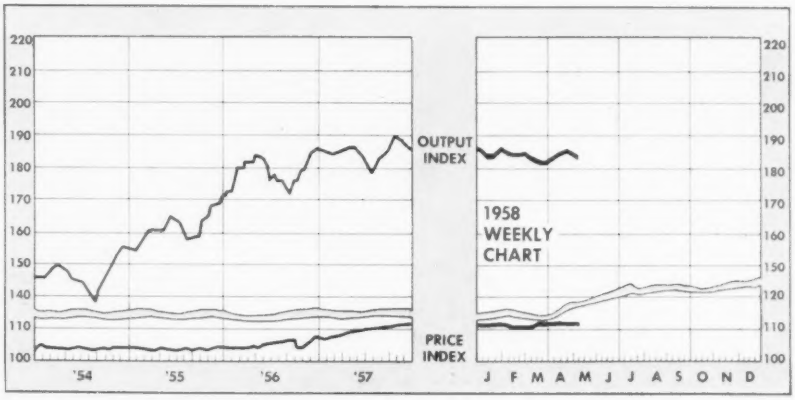
Thus, a piece of machinery with a tax life of 10 years could be written off in five years. A building now amortized over 30 years could be written off in 12½ years (7½ plus 5).

•

Organized labor is on the defensive everywhere—probably in its weakest position since the Taft-Hartley law was enacted.

In bargaining, the recession and high unemployment are hurting. That's the real meaning of recent news out of Detroit, where General Motors took the offensive against Walter Reuther's United Auto Workers and cancelled its contract with the union in advance of expiration. There's still a feeling in Washington that the auto makers and UAW will settle without a strike, but on terms far less favorable from the union's viewpoint than Reuther would have insisted upon had there been an economic upturn for Detroit specifically or for the economy as a whole.

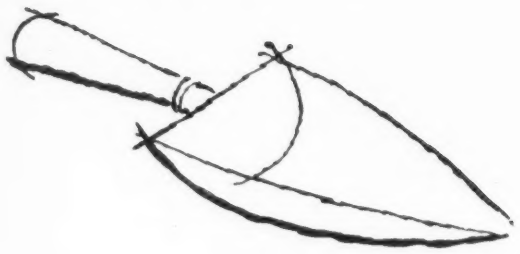
In Congress, odds are still against any general labor reform legislation getting through this year. But there is sentiment for tough new labor laws—especially in the Senate, where the McClellan Committee's disclosures have had an impact only now being recognized. This is one of the factors that has forced the AFL-CIO to take a conciliatory stand. When AFL-CIO President George Meany pledges labor's cooperation in drafting "constructive" labor measures, he is not asking for new law. In fact, union leaders are counting on the House to block and kill any restrictive bills than the Senate may pass.



Business Indicators

WEEKLY	Latest Week	Preceding Week	Year Ago
Chemical Week Output Index (1947-49=100)	179.0	181.0	183.5
Chemical Week Wholesale Price Index (1947=100)	111.0	111.0	109.8
Stock Price Index of 11 Chemical Companies (Standard & Poor's Corp.)	39.14	38.66	44.21

MONTHLY Wholesale Prices (Index 1947-1949=100)	Latest Month	Preceding Month	Year Ago
All Commodities (Other than Farm and Foods)	125.7	125.7	125.4
Chemicals and Allied Products	110.6	110.6	108.8
Industrial Chemicals	123.5	123.6	122.9



this much Tetrasodium...

Many leading brands of powdered soap contain 10%-15% Victor *tetrasodium pyrophosphate*. That's one reason why it's almost child's play on wash day to turn out all types of clothes clean as a hound's tooth.

Due to its synergistic action, Victor TSPP enhances the cleansing action of soap . . . literally softens hard water and also helps prevent iron stains. In addition, it's gentle on busy hands.

And here's a gentle hint if you're wondering what Victor phosphates, formates, and oxalates can do to clean up some of *your* problems: just send for a sample of the chemical you want to investigate. We'll have it on the way to you before you can say, "It *pays* to see Victor." Write on your company letterhead to: Victor Chemical Works, Box 572, Chicago 90.

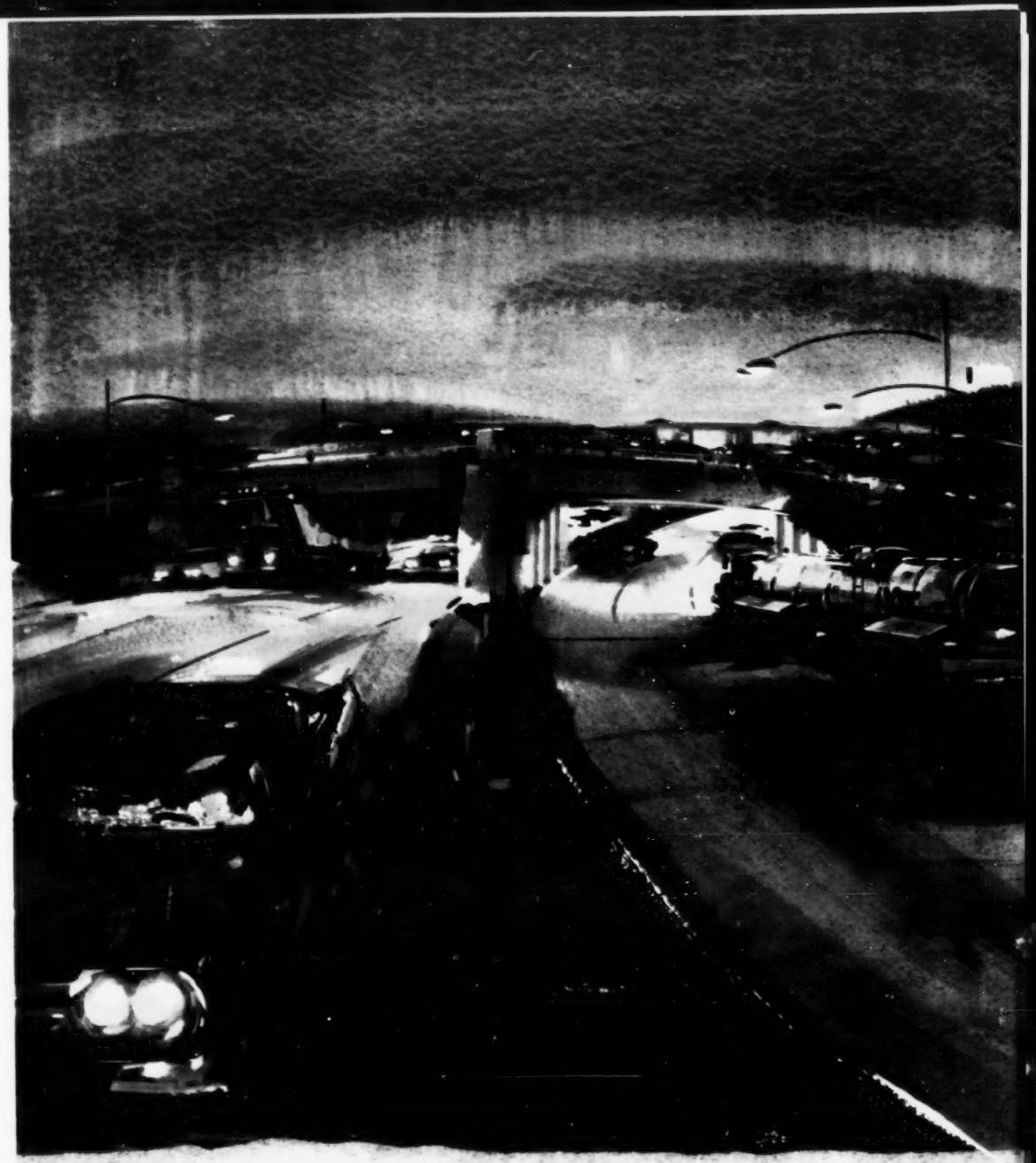
VICTOR
Dependable Name in
Chemicals
for 60 Years

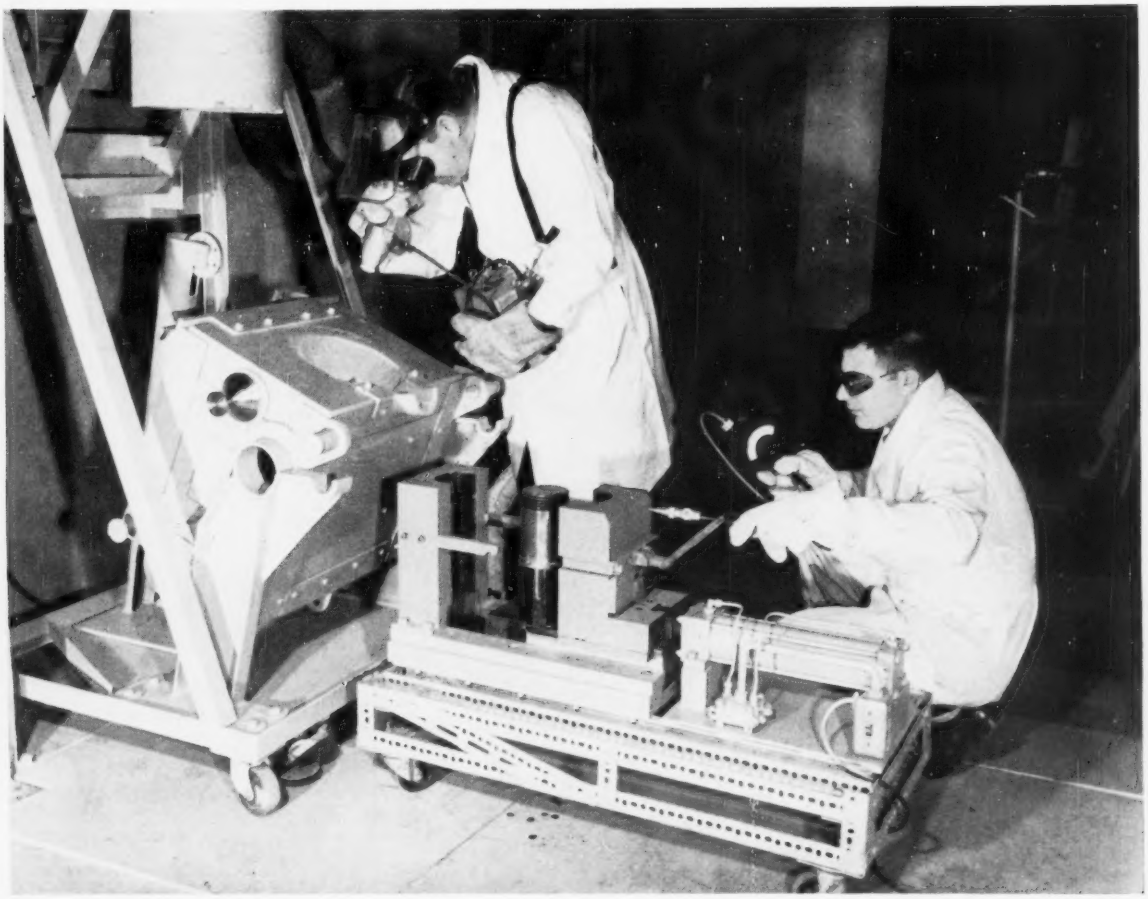
this much Oxalic...

Add heavy duty Victor *oxalic acid* to automobile radiator cleaning compounds and rust and iron scale cease to take their toll as trucks and cars roll along the road.

Most leading producers of radiator cleaners use Victor oxalic as an ingredient. They know this versatile Victor chemical helps keep cooling systems *running* cool . . . that it dissolves and washes out rust *without* injury to metal and rubber parts.

How are the sales of your products rolling along? Perhaps a Victor phosphate, formate, or oxalate can help speed them through production . . . make them real cool performers in today's market. To find out how Victor chemicals can help, give us the high sign . . . tell us what you want and a sample will be on the way before you can say, "It *pays* to see Victor." Write on your company letterhead to: Victor Chemical Works, Box 572, Chicago 90.





AI technicians monitor "cold" run of casting equipment for remote reprocessing of "hot" nuclear fuel.

Reprocessing Package Cuts Fuel Costs

At Atomics International Division of North American Aviation (Canoga Park. Calif.), engineers this week are grooming a new package type of fuel-recovery unit to be built next to a nuclear power reactor. Designed for complete remote control, the plant will enable nuclear power plant operators to recover valuable fuel from spent elements at low cost. Possible bonus: salable fission by-products.

The current reprocessing studies are part of an extensive experiment being conducted by AI for the Atomic Energy Commission. Goal: new ways to reclaim and refabricate irradiated nuclear fuels. The work is aimed primarily at developing chemical separation systems that will permit efficient, low-cost removal of fission products that build up in irradiated uranium and thorium fuels.

Along with this research in separations chemistry, the company is conducting a processing refabrication experiment, which includes remotely controlled casting of cleaned-up fuel into new fuel elements. The experiment is now in the "cold" mockup stage (*see cut*), in which unirradiated fuels are put through the processing cycle. In the second—or "hot"—phase of the program, the same equipment will be used with radioactive fuel elements that have been exposed to high-intensity radiation.

Dr. E. E. Motta—head of the company's chemical process development department and leader of the reactor-site fuel reprocessing project—believes simplified reprocessing and refabrication methods can be developed. Separation techniques under study include high-temperature volatilization, electrorefining in molten halide electrolytes, induction melting, arc melting and liquid metal extraction.

AI sees a commercial future for its present research, says that a package plant using a simplified extraction and refabrication process at the reactor site appears to be a practical first step. Here's why:

Considerable time is involved from the moment irradiated fuel is removed from a reactor to the time it is remade and returned for use in the reactor.

VIRGINIA

Limestone can also profit your plant

For more than 200 years, white men have been exploring Virginia's limestone caverns. Hundreds of thousands of tourists a year now troop through these underground wonderlands. But far more important to your new plant is the role this same limestone plays in the State's growing industries.

Six million tons a year of high grade limestone pour from Virginia quarries. Much of this becomes soda-ash, caustic soda, agricultural lime, cement and fluxing stone. And these are just a few of the materials . . . from coal to timber, from fish oil to peanuts . . . that roll up to your Virginia plant at short-haul savings.

Find out now about Virginia's unusual combination of competitive advantages for your new plant. Its conservative, home-rooted manpower. Its top land, sea and air transport. Its nearness to great Northeastern, Southern and Midwest markets. Its ample industrial water, electric power, natural gas. Its thrifty government . . . mild climate . . . and pleasant living. For complete, confidential site-finding help, write, telegraph or telephone—

Virginia Department of Conservation and Development

DIVISION OF PLANNING AND ECONOMIC DEVELOPMENT

State Office Building, Richmond, Va. Telephone MI 4-4111, Ext. 2911

First come storage periods in the reactor plant to reduce the radioactivity. Then there's a costly packing operation, and, since no commercial reprocessing plant presently exists, the fuel must be shipped to a government reprocessing center. There, the fuel is reclaimed, remade and, finally, shipped back to the reactor plant. This time-consuming operation requires rather large fuel inventories, which contribute to high original fuel costs and interest charges.

Cost Advantages: The location of a fuel reprocessing plant adjoining a reactor would have several cost advantages. Fuel inventories might be reduced considerably, thereby reducing both capital cost and interest charges. Integration of the nuclear plant and its fuel reprocessing auxiliary could also result in savings through the use of common laboratories, maintenance shops and staffs. Equipment such as cranes, shielded fuel storage, cleaning and water canals, and ventilating systems could be used by both installations. The purchase or rental of shipping containers and transportation costs could be eliminated. These factors, combined with simpler methods in the remaking of fuel, could substantially reduce fuel costs.

And power companies could derive additional revenue from the sale of radiation by-products and services.

A 150,000-200,000 electrical kilowatt nuclear power plant, for example, could bring in about $350,000 per year from the sale of fission fragments obtained in fuel reprocessing. It is also possible that installation of special recovery plants for a commonly used radioisotope, such as krypton-85, could produce a revenue of about $750,000 per year at today's prices.

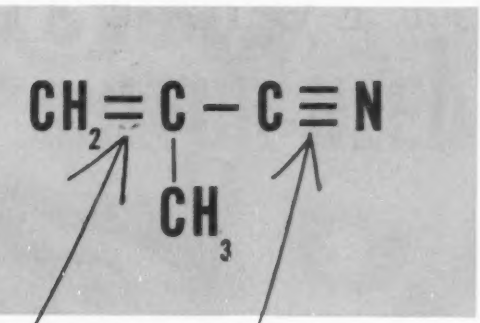
Second Goal: In addition to seeking simplified methods of fuel recovery, AI is trying to attain a higher percentage of burnup and consequent longer life of present fuels. Again, the objective is a lowering of nuclear power costs through higher fuel efficiency.

Of the two approaches to economy, AI feels on-the-spot recovery is most important now. The firm is concentrating its efforts on developing a practical and economical method of reprocessing a single type of fuel. But, in the long run, more efficient burnup of fuel will play an increasingly important economy role—and AI will be preparing to do business then, too.

a new

Eastman

intermediate



vinyl linkage

cyanide radical

short molecule!

Methacrylonitrile

Of principal interest in homopolymers and copolymers, methacrylonitrile is similar in reactivity and function to acrylonitrile. The presence of the methyl group, however, introduces significant variations in such polymers, including greater solubility and lower melting point.

Eastman has developed a new process for the production of methacrylonitrile, which has resulted in the availability of this reactive intermediate in high purity. Here are a few of the areas in which the use of methacrylonitrile might be profitably investigated.

HOMOPOLYMERS

Polymerization of methacrylonitrile may be carried out by bulk, gel, or emulsion techniques. The resulting polymers are of value in molding compositions, films and coatings, fibers and foams.

Molding compositions. Polymethacrylonitrile can be compression-molded, with or without plasticization. Its physical properties lie between those of the commercial thermoplastic and thermosetting resins. Polymethacrylonitrile possesses excellent electrical properties and shows good chemical resistance to acids, alkalies, hydrocarbons, alcohols and esters.

Films. Clear, tough, flexible films of polymethacrylonitrile have been cast from solvent solutions producing smooth, glossy lacquer-type coatings of outstanding durability, suitable for protecting wood, glass or metal surfaces. These films may be plasticized, pigmented or dyed.

Fibers. Its greater solubility and lower melting point, as compared with polyacrylonitrile, make methacrylonitrile attractive as a component of fiber-forming copolymers.

Foams. Plastic foams of closed cell structure and good mechanical properties, particularly tensile and flexural strength, result from expansion of polymethacrylonitrile acetone gels.

COPOLYMERS

with Butadiene. Butadiene-methacrylonitrile copolymers are similar in physical properties to commercially available acrylonitrile copolymers, but exhibit significantly better processing characteristics. They require less power for milling, allow faster incorporation of powdered materials, are cooler milling, have lower elastic recovery and retain excellent processability after long periods of milling or calendering at high temperature.

As elastomeric plasticizers for vinyl resins, methacrylonitrile-butadiene copolymers show higher tensile and strength values, clearer films, higher plasticity and better milling and calendering characteristics than do acrylonitrile copolymers.

with Other Monomers. Copolymers may be made with vinylidene chloride, acrylic and vinyl esters, and styrene for preparation of threads, fibers and films. Interpolymers with various compounds are useful for lacquers, paints, insulation coatings, impact-resisting films, molded articles, glass substitutes, and as strengthening layers for safety glass and self-supporting films.

INTERMEDIATE

The reactivity of methacrylonitrile combined with its short molecule makes it an excellent intermediate for synthesizing a variety of acids, amides, amines, esters and nitriles.

For samples and further information, write to Chemical Sales Development Department, Chemicals Division, Eastman Chemical Products, Inc., Kingsport, Tennessee.

Eastman CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE, subsidiary of Eastman Kodak Company

Fashion has put the "O.K." on hair colorants—now used by one woman out of three.

Hair Colorants Head for $58-million/year

Hair colorant products—a whole avalanche of them—are now cascading into U.S. markets. Last week's launching of a hair lightener, Bright Future, by Warner-Lambert's DuBarry division, is only the latest move in a field that has seen introduction of half a dozen major product lines by as many companies in the last six months. And more are to come.

The reason is plain. Hair coloring, once shackled by social stigmas, has grown fashionable, and some 40 national companies and hundreds of local hair colorant makers are scrambling for their share of a growing market. *CW*'s just-completed survey of 20 top hair colorant makers shows that by the end of '58, hair coloring will be a $42-million/year do-it-yourself business and a $16-million/year beauty parlor market—an increase of 50% over '56.

Although there is a measure of conflict in survey results, it's pretty well agreed that at least 75% of American women have used a hair colorant at one time or another, and 33% of American women are regular users of hair colorants. Of these "regulars," only 40% have grey hair.

Sometimes Say Dye: The term "dye" is reserved for permanent coloring that lasts until the hair has grown out. During recent years the word "tint" has become synonomous with dye, although it may still refer to a colorant that is permanent for as many as 4-6 washings. "Rinses" are hair colorants that wash out after one washing.

Practically all the permanent dyes on the market today are "oxidation dyes," derived from coal tar.† (Also referred to as "amino dyes," "para dyes," and "peroxide dyes.") These are applied cold and depend on hydrogen peroxide or some related oxidant for color development. The soluble dye intermediates are oxidized to insoluble colored products which actually dye the cortex or cortical (outer) substances which constitute the bulk of the hair. Formulations of "permanent" colorants contain as many as 20 different dye intermediates—although less than 1 gram of dye is needed to dye a head of hair.

Because the "oxidation dyes" are easily applied, produce natural-looking shades and have little or no adverse effect on normal hair, they have almost entirely replaced the metallic salts and vegetable dyes.

The market for hair dyes based on metallic salts—mostly lead and silver—has dwindled to almost nothing. A few hair colorants based on natural vegetable colorants, henna and camo-

† A detailed technical description of hair colorants may be found in *Cosmetics, Science and Technology*, (1957, Interscience Publishers.)

60 GRADES AND GRINDS MEET EVERY SULFUR NEED

PROCESSED CRUDE SULFURS
All grades 99.5% pure in sizes from 325-mesh to mixed fines and lumps.

REFINED INDUSTRIAL SULFURS
Grades range in fineness from 200-mesh through cones, sticks, lumps, solid barrels, all 99.85% minimum pure.

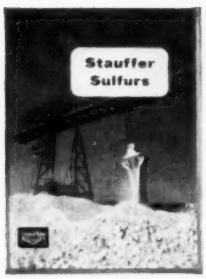
DISPERSED SULFUR
An aqueous dispersion, 68% sulfur, of particles averaging less than 2 microns in diameter.

RUBBERMAKERS' SULFURS
Specially formulated and standardized for tires, tubes and rubber specialties. Pure sulfur content from 68% (dispersed) to 99.8%. Sizes from 80- to 325-mesh.

CRYSTEX® INSOLUBLE SULFUR
Stauffer's insoluble sulfur, "Crystex", is a thermoplastic high polymer with a molecular weight in the order of hundreds of thousands. At least 85% of this material is insoluble in uncured rubber . . . does not migrate . . . eliminates "bloom".

AGRICULTURAL SULFURS
Among many grades are Dusting, Wettable, Dip and Coarse sulfurs for a wide variety of agricultural and livestock uses.

Stauffer is the country's largest user of sulfur and largest marketer of processed sulfurs.



Send for "The Newest Book on the Oldest Chemical". This 52-page book is not only a catalog of Stauffer Sulfurs but an authoritative treatise on Sulfur with many illustrations and useful tables.

STAUFFER CHEMICAL COMPANY

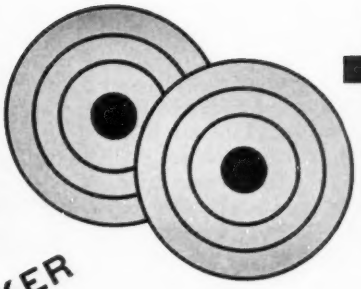
380 Madison Avenue, New York 17, N. Y.

Prudential Plaza, Chicago 1, Illinois

636 California Street, San Francisco 8, California

Stauffer CHEMICALS SINCE 1885

sure as

sh  tin'

DEPEND ON PUBLICKER

For uniform Quality

For steady Supply

For prompt Delivery

Ethyl Alcohol
Ethyl Acetate
Butyl Alcohol
Amyl Acetate
Butyl Acetate
Acetone
Acetaldehyde
Acetic Acid
Refined Fusel Oil

PUBLICKER INDUSTRIES Inc.

1429 WALNUT STREET, PHILADELPHIA 2, PA.

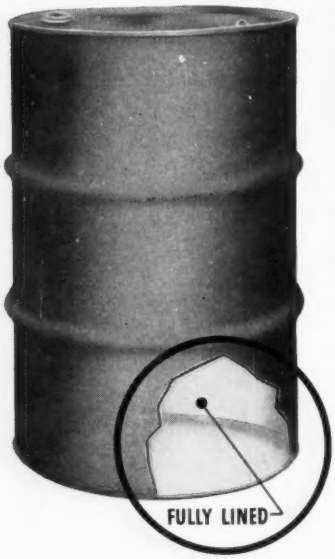
NEW YORK • NEW ENGLAND • MIDWESTERN DISTRIBUTORS, PUBLICKER ALCOHOL & CHEMICAL SALES CORP.

PHILADELPHIA—LOCUST 4-1400 • NEW YORK—OXFORD 5-4160 • BOSTON—HOMESTEAD 9-0022
CHICAGO—RANDOLPH 6-6678

SAVE 25%

USE BINDER

REBUILT, LINED, BUNG-TYPE DRUMS



Reduce your drum costs 25% by using these chemical-resistant, *rebuilt* drums.

BINDER Rebuilt Drums

- √ are dependable
- √ are chemical-resistant
- √ can be furnished lined to *your* specifications with any approved lining
- √ are bung-type
- √ have been proven in service by major chemical producers

Ask us about these economical, guaranteed drums.

DRUMS • BARRELS
Binder
QUALITY • SERVICE

BINDER COOPERAGE CO.

N. W. Cor. Delaware Ave. and Dickinson St.
Philadelphia 47, Pa.

mile, can be found on the market today but sales volume of these is negligible. Together, dyes based on metallic salts and vegetable colorings probably account for less than 2% of all hair dyes sold.

Almost all temporary rinses contain colors certified by the Food and Drug Administration and are acid based. They usually contain citric acid (tartaric acid is used to a lesser extent) and less than one-tenth gram of certified colors. They're marketed as solution, compressed tablets or capsules. The use of a wetting agent or other surface active agent, such as the quaternary ammonium compounds, makes the hair more receptive to color. Most color shampoos* are now based on synthetic surface active agents, rather than soaps.

Activity Aplenty: Just how active the field is can be gauged by the number of companies that have recently started pushing new hair colorants. In March, Rayette, Inc. (St. Paul) launched 22 new shades and six high-fashion toners in its "Color Tress" series of permanent dyes. It also put "super-fast" bleach and Naturol conditioner, a hair colorant base, on the market then.

Harry Bell, sales manager of Rayette, which distributes its hair colorants only through beauty salons, says that Rayette is putting more emphasis on hair colorants than any other products and adds, "Between '55 and '58, hair coloring went from the Model T Ford to the Thunderbird."

Clairol, Inc. (Stamford, Conn.), famous for its "Does She or Doesn't She?" advertising campaign for its colorants, in April offered new shades —blonde, brown and red—in its Come Alive series of temporary liquid rinses. These rinses will go into retail outlets as well as beauty salons.

DuBarry Div. of Warner-Lambert Pharmaceutical Co., last week introduced Bright Future, a hair lightener, in U.S. department and drug stores, and only a month ago Charles Antell began test marketing Color Beauty, a temporary foam rinse.

*Color shampoos are intended to impart merely a temporary color to the hair. Shampoo tints, with a mixture of dye, base and developer, impart a more permanent color. Progressive shampoos have accumulative action. Repeated use of the product builds up the amount of color imparted to the hair. During recent years quaternary ammonium salts have been used in conjunction with diluted dyes in both shampoo tints and liquid rinses to increase the accumulative effect.

BY WILLIAMS

CUPROUS OXIDE

for Navy Specification Shipbottom paints—and other Marine Anti-fouling paints.

CO-97
CO-90

These two Cuprous Oxides . . . CO-97 and CO-90 . . . as made by Williams . . . meet all chemical and physical requirements of U. S. Navy Specification MIL-C-15169 (Ships) for Type I and Type II. They are produced in a modern plant especially designed to supply Navy demands during World War II.

NOTE: Also for fungicides, insecticides, and a reagent for catalytic work.

ESSENTIAL PROPERTIES

	CO-97 (Type I)	CO-90 (Type II)
Cu_2O—Min.....	97%	90%
Total Cu—Min....	86%	80%
Cl—Max.....	0.4%	0.4%
SO_4—Max.....	0.1%	0.1%
Acetone Sol.—Max.	0.5%	0.5%
HNO_3 Insol.—Max.	0.3%	1.0%
325 Mesh—Max..	0.5%	0.5%
Metals not Cu—Max.	0.5%	—

For complete information on prices, packages and samples, please get in touch with your nearest Williams representative, or write us direct.

Address Dept. 39, C. K. Williams & Co., 640 N. 13th Street, Easton, Pennsylvania.

WILLIAMS
COLORS & PIGMENTS

C. K. WILLIAMS & CO.
Emeryville, Cal., E. St. Louis, Ill., Easton, Penna.

ei'co-sane

ei'co-sane (ī'kō·sān), *n.* [Gr. *eikosi* twenty.]
Chem. Any hydrocarbon of the formula $C_{20}H_{42}$

Technical Eicosane is a normal paraffin containing essentially twenty carbon atoms. It has a low melting point (96.5° F). Technical Eicosane chlorinates readily to produce compounds of outstanding stability with low viscosities at high chlorine contents.

Atlantic's Technical Eicosane is now adding a sales plus to many products: in compounds for flameproofing fabrics; in adding extra miles to automotive lubricants; as a raw material in the manufacture of chemical plasticizers.

For more information on Technical Eicosane, write or wire Chemicals Division, The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pennsylvania.

Definition by permission. From Webster's New International Dictionary, Second Edition. ©1957 by G. & C. Merriam Co.

ATLANTIC PETROLEUM CHEMICALS

PHILADELPHIA PROVIDENCE CHARLOTTE CHICAGO

In Canada: Naugatuck Chemicals, Division of Dominion Rubber Company, Ltd.
In Europe: Atlantic Chemicals SAB, Antwerp, Belgium
In South America: Atlantic Refining Company of Brazil, Rio de Janeiro

. . . at Port of Baltimore, an ideal location to serve *Foreign and* Domestic markets . . . plentiful power, productive workers and preeminent transportation.

Plan with a B&O man!

PHONE OR WRITE:

T. G. GORDON, Industrial Agent
BALTIMORE 1 LExington 9-0400

G. E. FERENCE, Ind. Development Agt.
NEW YORK 4 Digby 4-1600

A. C. TODD, Industrial Agent
CINCINNATI 2 DUnbar 1-2900

FIELDING H. LEWIS, Industrial Agent
PITTSBURGH 22 COurt 1-6220

W. E. OLIVER, Industrial Agent
CHICAGO 7 WAbash 2-2211

B&O BALTIMORE & OHIO RAILROAD

Constantly doing things—better!

SPECIALTIES

Coty, Inc., has had Hair Rinse Conditioner, a temporary rinse in liquid form, in test markets since last September. Helena Rubenstein is coming out with Bleach Perm-Blonde, a hair lightener in creme form and Bymart-Tintair is now going national with its New Satin Creme Formula Hair Coloring.

Roux Labs., Inc. (New York) brought out Roux Color Curl, a temporary rinse packaged in aerosol form, in January and is now putting a new formulation of Creme Color Shampoo, a permanent colorant, into the nation's 115,000 beauty salons.

Tint 'n Set, subsidiary of Diversified Drug Associates (Newark) is just going national with Tintstik, a touch-up hair color packaged in a lipstick case. And Gorolin Corp. (Chicago) which markets under its own name as well as making products (Glow) for Sears, Roebuck, has a completely new process in hair dyeing coming out in six months.

Breck is looking at the field, too, has a temporary color rinse in the laboratory stage. Avon, largest U.S. cosmetic company is reportedly working on hair colorants but reports "no market plans for a hair colorant in '58."

Revlon "always looking at everything," reports it "may see some colorants soon." The company may also be casting a longing eye in the direction of L'Oreal of Paris, the number one hair colorant maker in Europe and a serious U.S. competitor in beauty salons.

Who's on Top: Biggest in the temporary-rinse field is Nestle-LeMur which has about 30-35% of the retail market for color rinses. Noreen, Inc. (Denver) is probably second in the temporary-rinse group. Moving up fast in retail sales are Clairol, Roux, DuBarry and Tiz (Division of M. Pier and Co., Ft. Lauderdale, Fla.). Also fighting for the retail market are Charles Marchand Co. (New York), Bymart-Tintair (New York), and Helena Rubinstein.

Shop Talk: In the beauty salon business Clairol is color queen. Roux is probably second with L'Oreal of Paris (only in U.S. markets four years) running a close third. L'Oreal has licensed Cosmair Inc. (Clark Township, N.J.), to manufacture its products for the U.S.

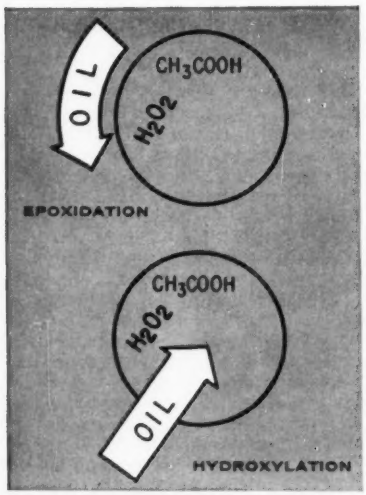
Duart Manufacturing Co. (San

DU PONT
REG. U.S. PAT. OFF.

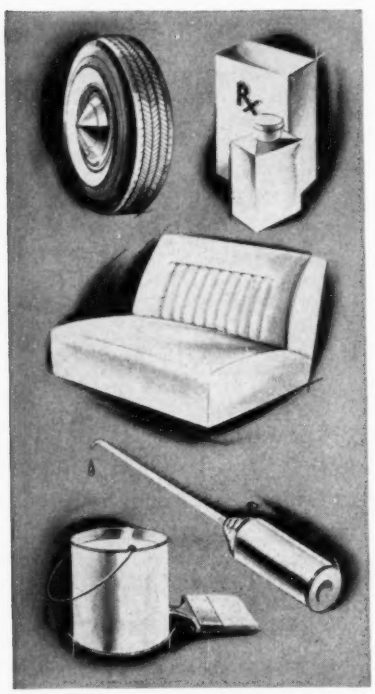
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

PRODUCT NEWSLETTER

featuring **ALBONE**® *hydrogen peroxide*



• Epoxidation seems to occur rapidly on surface of resin catalyst; in hydroxylation uniform penetration into the bead may occur and desorption is slow enough to allow hydrolysis of the epoxide to glycol.

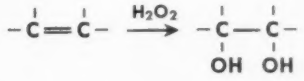


• Epoxidation or hydroxylation can lead to improved coatings and resins, grease and lube additives, plasticizers.

Progress report on Du Pont peroxygen research

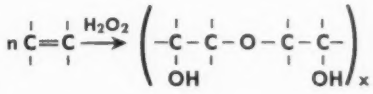
Du Pont's continuing research in peroxygen chemistry has resulted in the development of some new techniques which are commercially attractive. Our epoxidation procedures are examples of this research.

New along these lines is the recent contribution of Du Pont chemists in pioneering a one-step method for hydroxylating such materials as unsaturated fatty acid esters.



Prior methods required two steps and contributed to the hydrolysis of ester groups if they were present. The new method allows the retention of desirable ester groups. This is an important advance which may result in higher, purer yields of dihydroxy derivatives, and a more direct route to such products as brake fluids, rubber modifiers, paints and coatings.

The new hydroxylation technique provides an unexpected bonus in that a special adaptation of the procedure permits conversion of double bonds directly to polyether.



End uses for polyethers prepared in this fashion have not been established but one suggestion is that they may be used in preparing coating materials with improved alkali resistance.

Importance of the catalyst

The trick of these procedures is to choose suitable reaction conditions and the proper catalyst for hydrogen peroxide, depending upon whether you want epoxides, glycols or polyethers. Significant is the fact that the catalysts come from the same family of materials, and the determining factor in what products will be obtained appears to lie in how porous the catalyst beads are.

A glance at the accompanying diagram will show a simplified version of how these catalyst systems probably work. A non-porous catalyst is used in epoxidation; one that is involved in a fast surface reaction so that there is little time for the epoxide formed to be hydrolyzed to by-products. Hydroxylation requires a porous catalyst which the fatty ester probably penetrates uniformly over sufficient time so that glycol is formed. Given a long enough reaction period and a high enough temperature, the porous catalyst will form polyethers.

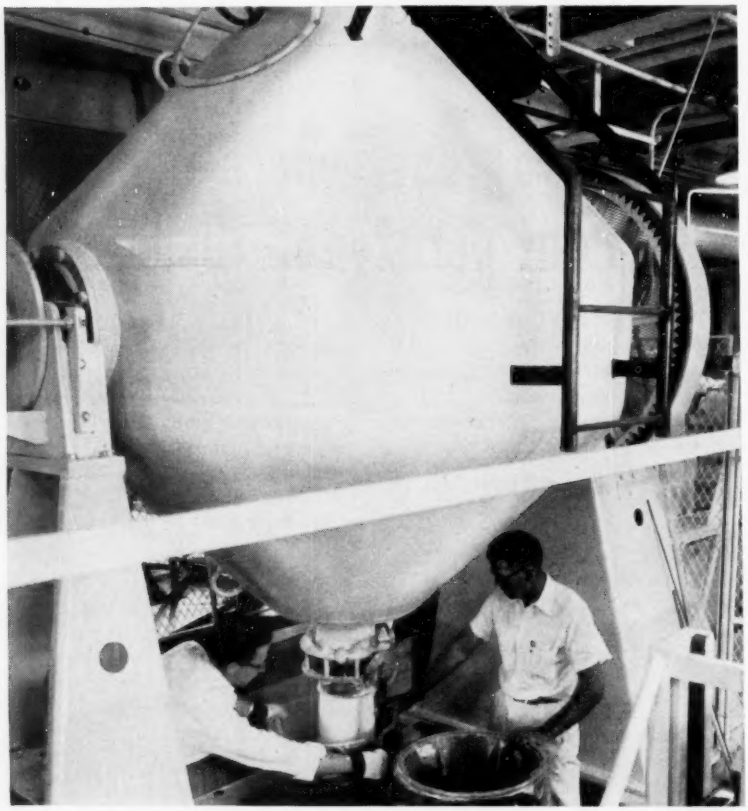
This is a Du Pont preview of processes which promise new efficiency when going directly from double bond to glycol or when going farther to polyethers. It's typical of the exploratory work Du Pont research chemists are doing to find new, profitable uses for hydrogen peroxide in organic chemistry. Streamlined hydroxylation and epoxidation techniques, two results of these efforts, may be applicable to your own research or processing. We'll be glad to help you with any application of hydrogen peroxide. Just write us on your letterhead at the address below.

E. I. DU PONT DE NEMOURS & CO. (INC.)
ELECTROCHEMICALS DEPARTMENT
PEROXYGEN PRODUCTS DIVISION (CW-5
WILMINGTON 98, DELAWARE

Cut drying time up to 90%. For information on Pfaudler glassed-steel dryer-blender, ask for Data Sheet 26.

Pfaudler

Pfaudler Corrosioneering News Published by The Pfaudler Co., a division of Pfaudler Permutit Inc., Rochester, N.Y.



Eliminates intermediate materials handling. Product goes from process into the Pfaudler conical dryer-blender, and then directly into package. Dried and blended in one operation.

Corrosion resistance of glassed steel unimpaired by gamma radiation

No adverse effects could be detected from the exposure of glassed steel to gamma radiation in tests recently completed by Pfaudler in cooperation with Oak Ridge National Laboratory and other installations.

Preliminary evaluations have been completed on the test which exposed glassed samples to a total dose of 10^{10} roentgen from spent fuel elements.

Glassed steel is being considered as a construction material for chemical processing involving nuclear energy wherever corrosive conditions are particularly severe and ease of decontamination is important.

Probable uses of glassed steel in this vast field include storage of acids and other materials which may or may not be radioactive, storage and disposal of radioactive wastes, and chemical processing of highly radioactive and corrosive materials.

Both mechanical and corrosion tests indicate that Pfaudler glass is unaffected by gamma radiation up to 10^{10}r, although a color change does occur.

A larger test program is now under way to follow up these early results and to determine more conclusively the effect of radiation on glassed metals.

Now Upjohn saves 32 hours drying 2500 pounds of Orinase

Sixteen hours are all it takes for the Upjohn Company to dry and blend 2500 pounds of Orinase in the Pfaudler conical dryer-blender.

It used to take forty-eight hours to dry that much of Upjohn's oral antidiabetic in two straight vacuum dryers.

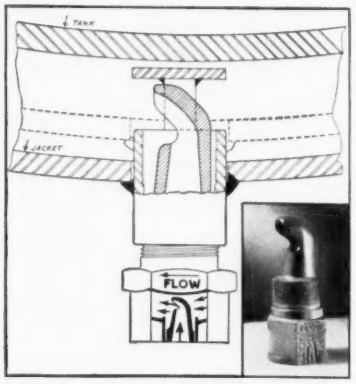
Upjohn says it also saves eight hours a week in materials handling time with the new dryer.

Since it's a pharmaceutical, the product poses a purity problem which is nullified by the noncontaminating glassed-steel construction of Pfaudler dryer-blenders.

Other companies, many handling corrosives, report similar savings, some of them cutting drying time by as much as 90%. The smooth glassed surfaces of the drying chamber are insensitive to all corrosives except hydrofluoric acid and hot alkalies above pH 12.

The Pfaudler design offers a solid, one-piece drying chamber which offers maximum strength and drying area unbroken by joints or clamps. The vacuum exhaust tube is centrally located for the most efficient vapor removal.

There's much more about the Pfaudler dryer-blender that proves its efficiency of operation over other designs . . . all of it in Data Sheet 26 which you'll find offered in the coupon.



New data on turbulent flow in reactor jackets

Capacities and characteristics of the Pfaudler Agitating Nozzle and its superiority over the commonly used spiral jacket are discussed in a new

Corrosioneering News

Quick facts about services and equipment available to help you reduce corrosion and processing costs.

Bulletin No. 950. Working basis for the agitating nozzle is the use of kinetic energy. This is available through the pressure and volume of the heating or cooling liquid delivered to the reactor as a direct means of producing circulatory movement of entire contents of jacket. Capacity chart and typical hookup of nozzles are shown. Method of selecting nozzles is fully covered. Ask for Bulletin No. 950.

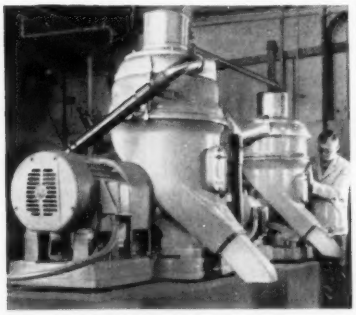
Pre-test lab takes all the gamble out of equipment buying

Whenever you engineer a process involving corrosives you're naturally a little more selective than you might be otherwise.

One way to satisfy this care in selection is to take advantage of the Pfaudler pre-test lab.

We'll run a sample of your product or materials through the equipment here at our lab, do an analysis, and show you what you can expect on the production line.

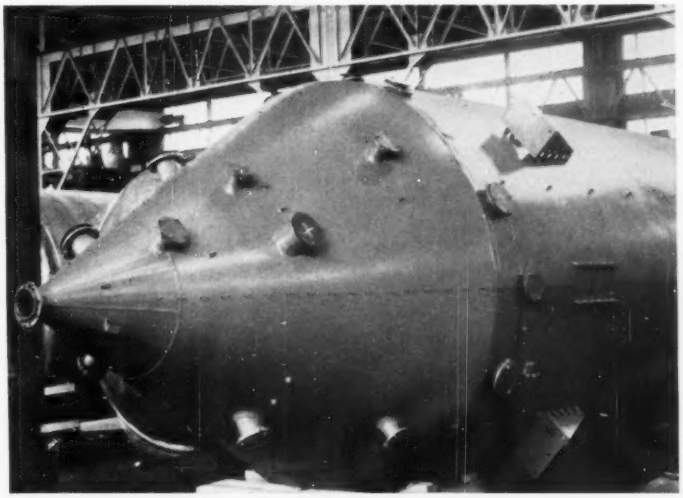
Our lab is equipped with 10, 30, and 300 gallon glassed-steel reactors, a two-foot glassed-steel conical



dryer-blender, model agitation units, heat transfer testing equipment, two self-desludging Titan centrifuges, wiped-film evaporators, and a complete pilot assembly for distillation and fractionating.

Any testing done is, of course, completely confidential. It can sometimes even be arranged for you to rent certain of the equipment for pre-testing in your own plant.

Either way you know exactly how everything works, before you make a purchase. Ask your Pfaudler representative for a pre-test questionnaire.



"Is Pfaudler making Sputniks?"

—This was an oft heard question recently from visitors to our Rochester plant. What they saw was this unusual new cone bottom reactor we fabricated and glassed for a leading chemical producer. All those nozzle openings on the conical surface made glassing a little "touchy," so it took us a little longer than with standard models. The vessel is 388 inches long with a 138-inch OD, and will be used for storing and purging polymer chips at 160°F. An internal column does the purging with an inert gas.

Why do we show it here? To suggest that we can put the corrosion resistance of Pfaudler glass to work on more than conventional reactors, storage tanks, columns, etc.

THE PFAUDLER CO., a division of PFAUDLER PERMUTIT INC.
Dept. CW- 58 Rochester 3, N.Y.

Please send information on ☐ Data Sheet 26 Conical Dryer-Blenders; ☐ Bulletin 950 Agitating Nozzles; ☐ Pfaudler Buyer's Guide.

Name .....

Title .....

Company .....

Address .....

City ..... Zone ..... State .....

Catalin
ANTIOXIDANTS

SET THE HIGHEST STANDARDS FOR
QUALITY, PURITY AND EFFECTIVENESS

IN HIGH OCTANE AND JET FUELS, FEEDS, FOODS AND RUBBER
they minimize the adverse effects of oxidation,
reduce spoilage, preserve against heat, time and the elements

CAO-1
(2,6-Ditertiary-Butyl-Para-Cresol)
Inhibits gum and peroxide formation in high-octane aviation gasolines . . . turbine and jet engine fuels.

CAO-3
(FOOD GRADE)
Butylated Hydroxy Toluene
For animal feeds, edible fats, oils, food wrappings, pharmaceuticals, etc.

CAO-5
2,2'-Methylenebis
(4-Methyl-6-Tertiary-Butyl Phenol)
For White and Light Colored Rubber. Tires, household, medical products.

CAO-6
2,2'-Thiobis
(4-Methyl-6-Tertiary-Butyl Phenol)
For Polyethylene wire coatings, Rubber and Petroleum products.

Write for complete specifications and laboratory samples.

In addition to antioxidants, Catalin chemical products include bacteriostats, oil additives, alkylation products and special chemicals.

Catalin also produces a wide range of urea, phenolic, cresylic, resorcinol and melamine industrial resin formulations.

Catalin plastics include polystyrene, polyethylene and nylon molding and extrusion compounds.

CATALIN CORPORATION OF AMERICA
One Park Avenue, New York 16, N. Y.
Plants: Fords, N. J. • Calumet City, Ill. • Thomasville, N. C.

SPECIALTIES

Francisco), Rayette, Godefroy Mfg. Co. (St. Louis), Sales Affiliates (New York) and Helene Curtis (Chicago) also have big sales volume.

Home Heads the Market: The biggest market for hair colorants—on a unit basis—is in the do-it-yourself field. (Less than 20% of hair coloring is done in beauty salons.) Temporary rinses account for the greatest volume of hair colorants sold through retail outlets.

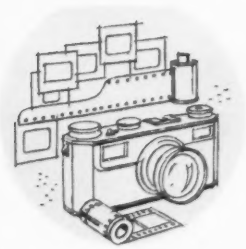
Permanent dyes account for the greatest dollar volume although more temporary hair colorants than permanent hair dyes are purchased by the do-it-yourself trade. Cost per application of a permanent dye is 75¢—$1.00, while cost per application of a temporary liquid rinse is about 20¢ and a temporary powdered rinse about 4-8¢.

By far the leading retail outlet for hair colorants is the drug store; it accounts for at least 60% of the total retail sales volume. Department stores rate second, followed by variety stores. Several companies that are anxious to cash in on supermarket success are building special display counters for chain stores.

Professional Touch: Although the do-it-yourself field is showing the greatest growth in hair coloring, hair coloring in beauty salons is on the increase, too. Practically all of the nation's 115,000 beauty shops now offer hair coloring.* A Rayette, Inc., survey indicates that women are willing to pay out as much as $150/year to beauty salons to have the color of their hair changed, while they are willing to spend only $30/year for permanent waving.

More Competition Ahead: Hair coloring is going to become more intensely competitive within the next few years. Jack Rosen, president of Charles Antell, is confident that "Every cosmetic house will be in color in five years whether they want to or not. Larger companies won't jump into the market until it's big enough but they'll be there in five years. As soon as the public is conditioned a little more, hair coloring, just as hair sprays, will be everywhere."

Look magazine, November 12, '57, said that in '58, 55 million American women will spend $120 million for hair coloring—$40 million at retail outlets and another $80 million at beauty salons. The $80 million to be paid out to beauty salons includes the cost of labor as well as materials used for hair coloring. Rayette, Inc. (St. Paul) expects the hair coloring market to reach $150 million in '58. Estimate includes retail market and beauty salon business including labor costs.



IF YOU USE

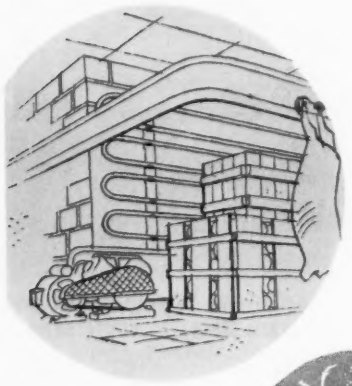
METHANOL

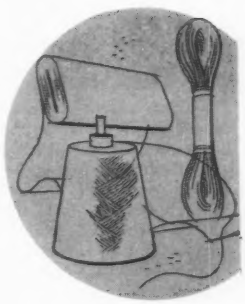
It will pay you to know

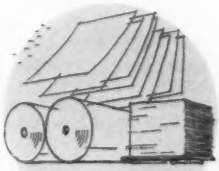
ESCAMBIA

IT WILL PAY YOU TO KNOW THAT—

1. **New Source**
   This new source of methanol is available to you now.
2. **Highest Quality, Purity**
   Your requirements for methanol of highest quality and purity and for specific grades will get immediate attention at Escambia.
3. **Fast Delivery**
   Fast delivery to you is available from the plant location near Pensacola, Florida, in tank trucks and tank cars.
4. **Technical Bulletins**
   You may get technical bulletins and other information—write or call the address below—





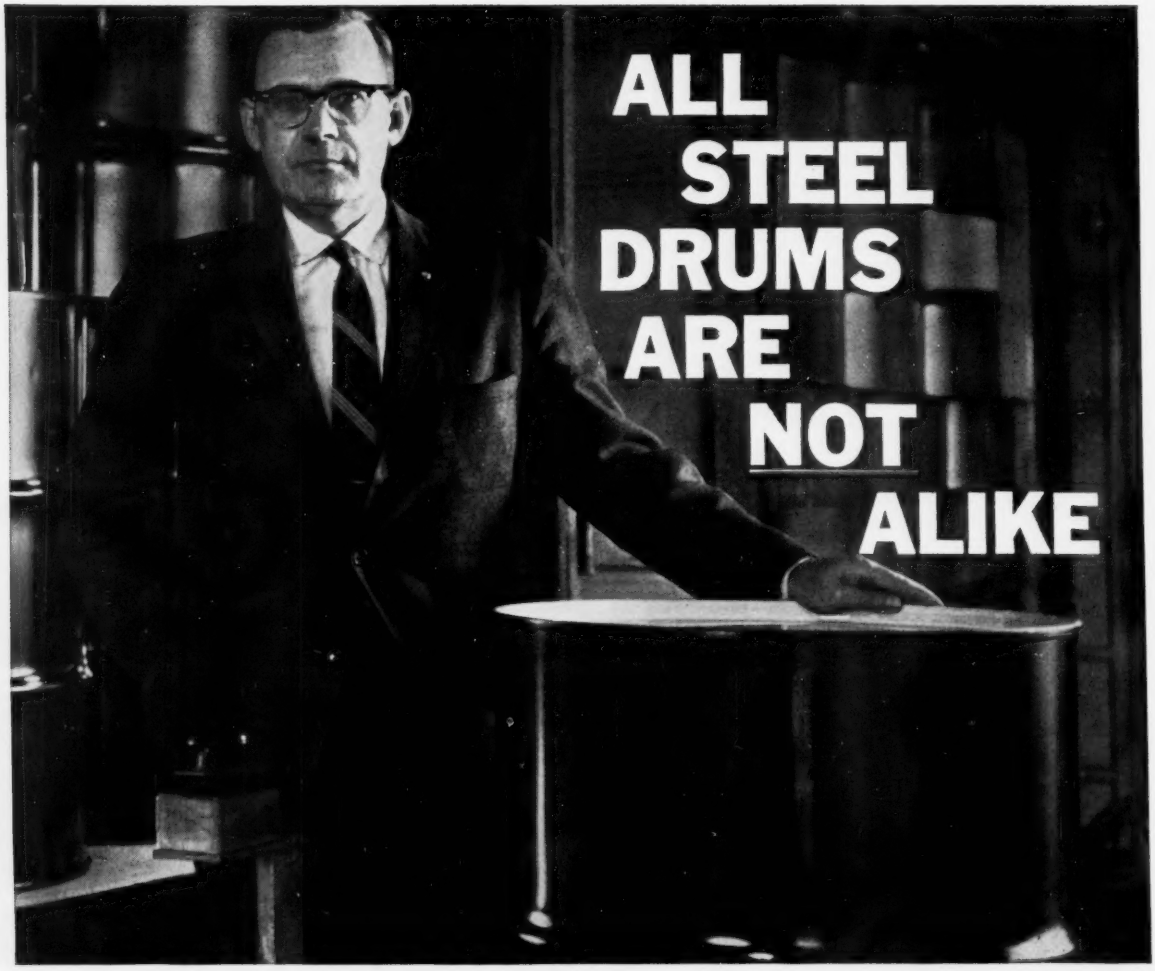


ESCAMBIA CHEMICAL
CORPORATION

261 MADISON AVENUE • NEW YORK 16, N. Y.
NEW YORK TELEPHONE • OXFORD 7-4315

MANUFACTURERS OF: ESCAMBIA **P V C PEARLS*** ESCAMBIA PVC RESINS **BAY-SOL*** (NITROGEN SOLUTIONS) **AMMO-NITE*** (PRILLED AMMONIUM NITRATE FERTILIZER) AMMONIA NITRIC ACID

*TRADEMARKS OF ESCAMBIA CHEMICAL CORPORATION



Now get two important purchasing advantages and positive product protection, too, with U. S. Steel rust-inhibited drums

In a rust-inhibited drum you can't buy better quality than U. S. Steel.

Every shell, head and bottom is precisely formed, chemically cleaned, then coated with just the right amount of zinc phosphate. At U. S. Steel, all this work is done before final assembly, to give maximum product protection.

And every pail and drum comes with two purchasing advantages to help you save time and money:

1. Full, complete line. U. S. Steel offers today's widest selection of steel shipping containers. Sturdy pails from 2½ through 12 gallons. Drums through 57 gallons. Linings and closures supplied to your specifications—color-decorating to meet all your requirements.

You get the container with exactly the right properties for your products, in the most efficient size. And you deal with one dependable manufacturer.

2. Punctual deliveries. With factories in seven key areas, U. S. Steel container deliveries can be timed to your production schedules. You minimize inventory problems, get on-time delivery. And you can take delivery by rail or truck, whichever is more convenient.

So talk over your own container needs with the man from U. S. Steel and benefit from over 40 years of steel shipping-container experience.

Factories in: Los Angeles, Calif. · Alameda, Calif. · Port Arthur, Texas · Chicago, Ill. · New Orleans, La. · Sharon, Pa. · Camden, N. J.

DO YOU NEED THE LASTING PROTECTION OF USS STAINLESS STEEL CONTAINERS?

For some products, stainless-steel containers can be the least expensive of all. Learn if you can save money with a U. S. S. stainless container. Consult your U. S. Steel representative, or write for free brochure. U. S. Steel Products Division, 30 Rockefeller Plaza, New York 20, N. Y.

United States Steel Products Division

USS TRADEMARK

John "Whitey" Wenk traces gas loss, smoke source with gas-velocity indicator at Bayway refinery.

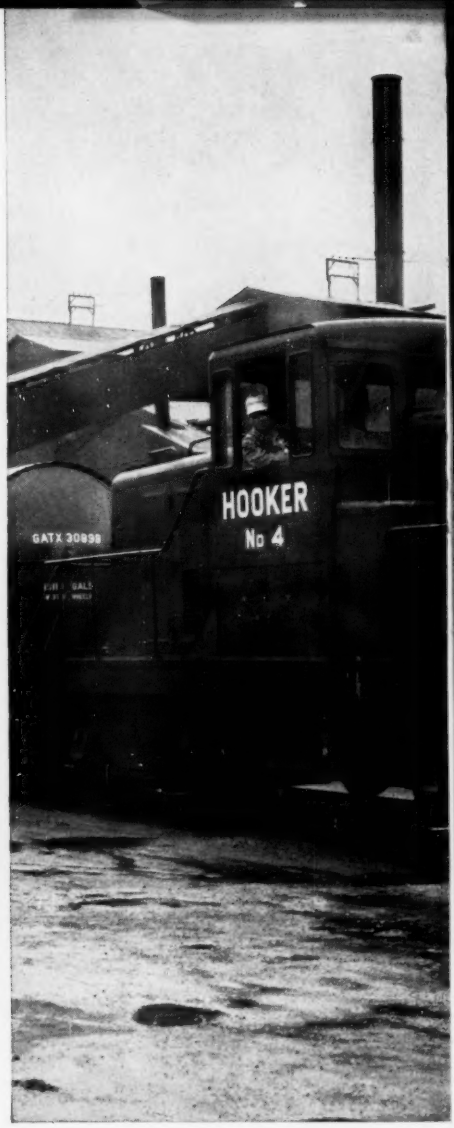
He Patrols Esso's Antipollution Beat

This week, windows in the homes of the highly industrialized Elizabeth, N.J., area are opening wider to catch warming spring breezes. And nearby at Esso Standard Oil's Bayway refinery, an around-the-clock patrol by the refinery's Conservation Control Division works to keep the breezes fresh. The group's routine, pictured here, offers other process industry firms a look at an effective pollution policing program that is paying off in better community relations—and in lower plant costs.

Bayway's approach to pollution problems is direct, hard hitting. Conservation Control's roving patrol keeps constant tab on all conditions that could contribute to pollution—flaring, smoke, oily sewers and the weather. The waterfront area is watched for harbor pollution; refinery effluent is sampled daily for a laboratory check of oil ppm. turbidity and pH. Automobile trips are made through nearby residential areas to check air pollution.

Evidence of pollution is reported to operating units immediately, and unit operators and the patrol go to work to pinpoint the problem spot. As part of the refinery's operating division, Conservation Control even has the authority to recommend shutdown of re-

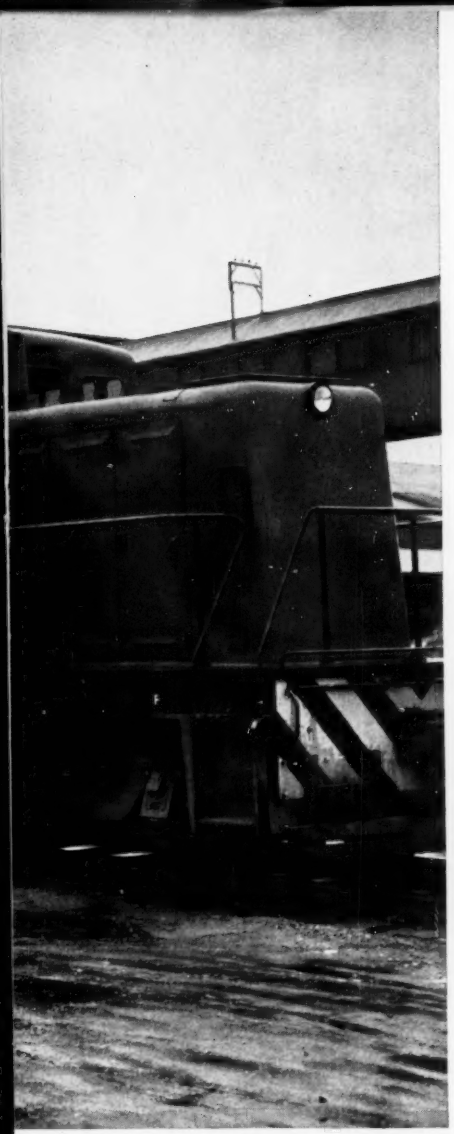
CROSSETT CHEMICAL COMPANY'S 45-TON LOCOMOTIVE plays an important role in their wood distillation and tall oil operations in Crossett, Arkansas. This company uses their G-E 45-tonner seven days a week, eight to ten hours per day to move raw materials and for other important switching operations.



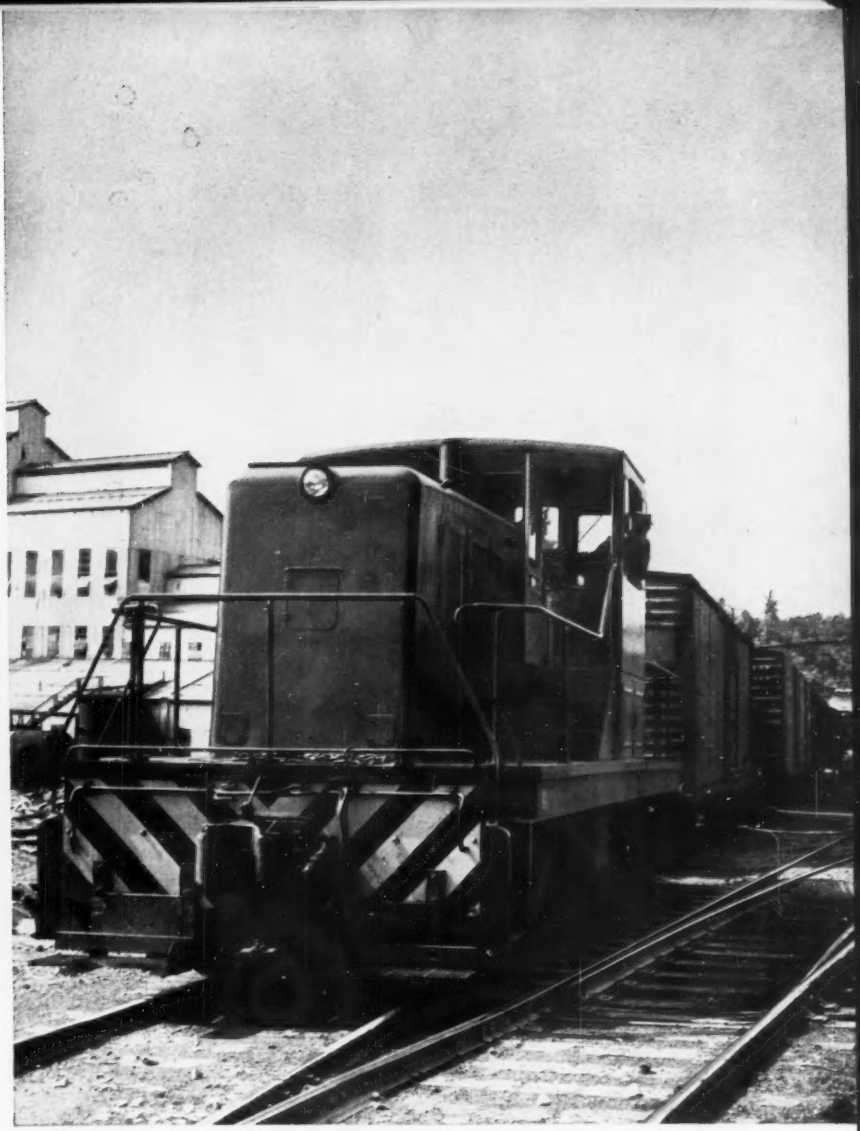
HOOKER ELECTROCHEMICAL COMPANY'S 65-TON LOCOMOTIVE, a powerful 550-horsepower unit, gets wide use at their important

PUTTING PLANT TRACKS TO WORK . . . .

How General Electric Locomotives Help Three Large Chemical Companies Increase Profit Margins, Speed Material Handling



Niagara Falls, New York plant. This locomotive, pictured above, can and does handle all switching operations in this plant with ease.



TENNESSEE PRODUCTS AND CHEMICAL CORPORATION owns and operates ten General Electric locomotives . . . two 25-tonners, one 45-tonner, two 65-tonners and five 80-ton units. According to plant personnel at Lyle, Tennessee, these locomotives "get the jobs done on time and are available for duty 24 hours a day."

The operations carried on by the three chemical companies described above have two things in common: getting raw materials in . . . getting processed goods out. These companies rely on General Electric industrial locomotives for these vital operations. They agree that:

G-E LOCOMOTIVES SAVE MONEY because they require little maintenance, use low-cost fuel, have no complicated, expensive-to-repair gears and transmissions, and are available up to 95 percent of the time for key plant haulage jobs.

G-E LOCOMOTIVES ARE FAST AND EFFICIENT. A press of the starter button puts a G-E diesel-electric locomotive on the job. High tractive power—the kind of power often needed for chemical plant material handling—is readily available. Locomotives are doubly efficient because they let these companies put their existing plant tracks to more profitable work.

G-E LOCOMOTIVES GIVE LONG SERVICE because General Electric industrial haulage specialists work with you to select the right locomotive to meet your haulage requirements. Complete parts and parts service is as close to you as your nearest General Electric Apparatus Sales Office.

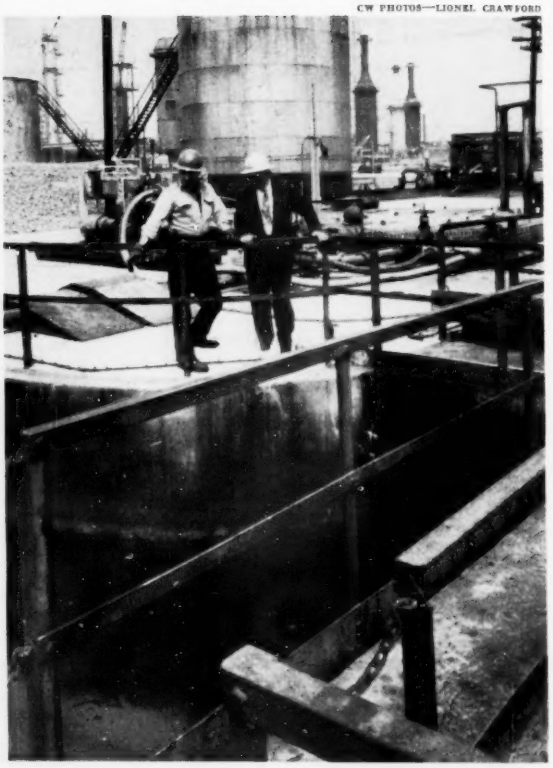
IF YOU NOW HAVE TRACK OR IF YOU ARE CONSIDERING A NEW PLANT SITE, ASK FOR A FREE SURVEY THAT WILL SHOW HOW YOU COULD SAVE WITH A GENERAL ELECTRIC LOCOMOTIVE. Call your nearest General Electric Apparatus Sales Office. It's listed in the white pages of your telephone directory. General Electric Co., Locomotive & Car Equipment Dept., Erie, Pa. 120-101

Progress Is Our Most Important Product

GENERAL ELECTRIC

CW PHOTOS—LIONEL CRAWFORD

ALARM—OIL LEAK! Call to Paul Boyer interrupts talk with group head, Fred Greene, in weather office.



HUNT BEGINS: Operator at oily-water separator shows incoming oil from sewer system to Wenk, on patrol.

finery units—a procedure that is followed when other corrective action is ineffective.

Community Relations: The same direct approach has been followed in dealing with the community. If an equipment upset occurs that might cause pollution outside the refinery, Conservation Control alerts Bayway's public relations department to the problem and the public is immediately given the facts. On individual complaints, a member of the roving patrol—or, if necessary, the group's division head and a public relations representative—visits the complainant, validates the plaint, explains the refinery problem and the corrective measures that are being taken.

Use of the group's weather station data helps validate claims. A check of prevailing winds sometimes establishes that a complainant's home was actually upwind at the time of an equipment upset. The group also enlists the aid of agricultural agents, universities and other industries when necessary. And when a noise complaint is received, noise-measuring equipment is taken to the complainant's home for an on-the-spot check.

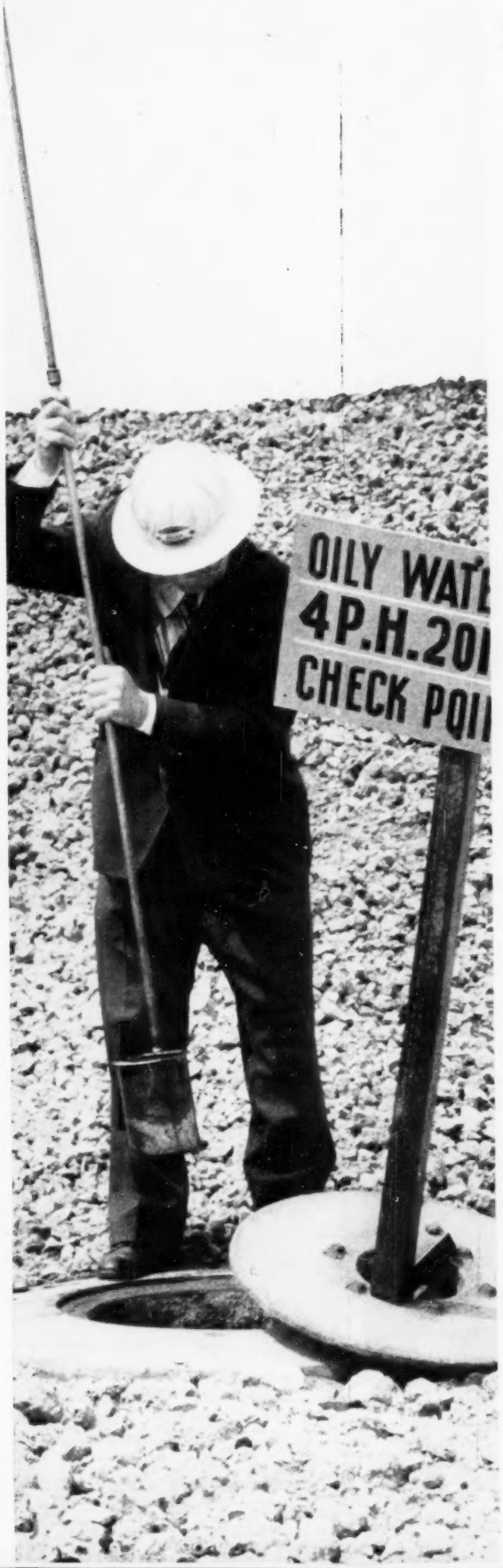
When the roving patrol finds that the refinery is not responsible for the problem, it checks the entire area to establish the actual source of the trouble. While the refinery won't divulge the source to a complainant, Conservation Control has often helped an offending plant solve its problem—if the offender requests such aid.

Long on Experience: Bayway actually laid the groundwork for its present program long before most people gave pollution a second thought. In 1929, it set up a group called Air Men who, as the roving patrol, form the backbone of today's Conservation Control Division. The original duties of around-the-clock weather and refinery checks to assist plant operators in minimizing air pollution have been perfected over the years. The patrol's members are old hands at refinery operation.

"Often, an educated nose is the only thing that can tell you where the pollution is coming from," says John "Whitey" Wenk, one of the group's coordinators and a member of the roving patrol.

Affecting Cost: The group's fast action, plus Conservation Control's additional activities of product measurement, loss study and heat and utility usage add up to plant cost reduction, too. But results didn't come without a price—"several million dollars," according to Esso—spent merely for pollution abatement in the past five to six years.

Esso's goal for pollution reduction established with



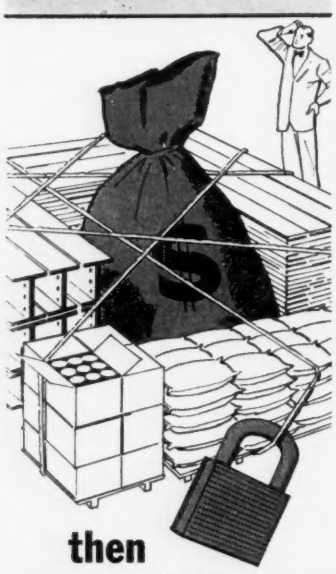
SEWER CHECKPOINT: Wenk hauls up sample of water from sewer to check for oil, pinpoint leaky unit.

PHONE REPORT: He identifies leak by odor, appearance of sample (in hand), reports to supervisor.

LEAK'S END: Supervisors join in post-mortem huddle.

WEATHER CHECK: Data is included in shift report.

CASH TIED UP IN INVENTORY?



then release it through

LAWRENCE SYSTEM

Your inventory is prime collateral . . . and Lawrence specializes in providing inventory financing right on your own premises—quickly and economically! For full details call our nearest office collect or send the coupon.

Without obligation please send me your brochure, Golden Catalyst.

Name_____

Firm Name_____

Address_____

Lawrence on Warehouse Receipts ...is like Certified on Checks

LAWRENCE SYSTEM

LAWRENCE WAREHOUSE COMPANY

NATIONWIDE FIELD WAREHOUSING

37 Drumm St., San Francisco, Calif.
100 N. La Salle St., Chicago 2, Ill.
79 Wall St., New York 5, N.Y.

OFFICES IN ALL PRINCIPAL CITIES

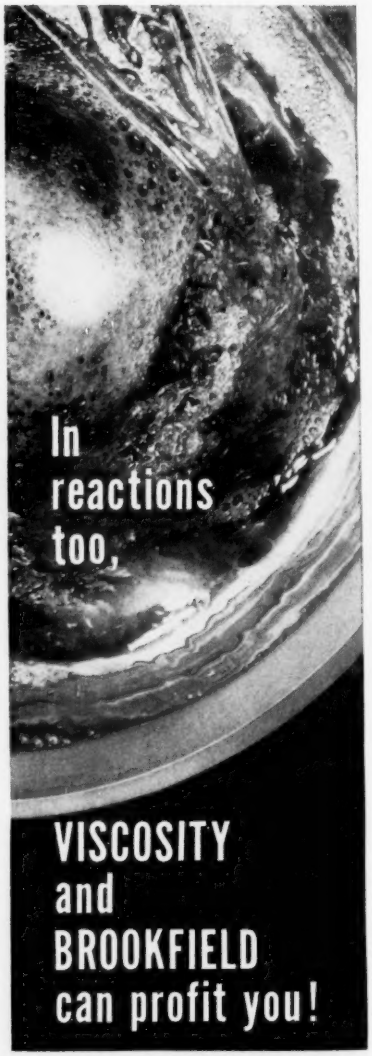
PRODUCTION

HOMEWORK: Wenk listens to housewife's complaint on noise.

the aid of a Stanford Research Institute survey: a 55-70% improvement over '52 conditions. Improvement already tops 50%, is expected to hit 68% by year's end.

But Esso realized long ago that pollution reduction takes more than modern equipment. Everyone in its organization is given an understanding of the problems, knows his responsibilities. The formation of the Conservation Control Division has paid off by helping with this task. As Fred Greene, the division's head, sums it up: "We're the one operating group that is trying to get the others to put us out of business."

DAILY REPORT: Greene tells division heads of day's jobs.



It's true. In-process viscosity measurement is the most direct progress report of many chemical reactions that you can obtain. In polymerization reactions, for example, Brookfield process-mounted Viscometran units eliminate the need for constant sampling, assure greater product uniformity and guard against run-away reactions.

Like color, pH and stability the viscosity of any material is a vital property, a fundamental measurement, which can be easily and accurately evaluated and controlled with low-investment Brookfield instrumentation.

If you would like to know more about the profitable role of viscosity control in your processes, write today for complete technical information. There is no obligation.

the world's standard for viscosity measurement

Brookfield

ENGINEERING LABORATORIES INCORPORATED
STOUGHTON 114, MASSACHUSETTS

interested in U.F. resins?

Allied U.F. CONCENTRATE—85 gives you 5 economies

This is how Allied's "U.F. Concentrate—85" saves money five ways over urea and formaldehyde compounded separately:

1

2

3

4

5

FASTER PROCESSING

because there's less water to evaporate. "U.F. Concentrate—85" gives you 60% formaldehyde, 25% urea, only 15% water.

LESS KETTLE CAPACITY, LESS STEAM REQUIRED

With a higher concentration of active ingredients, you can use a smaller kettle—or produce bigger batches with existing equipment.

NO HEATED STORAGE

You don't need it—even though "U.F. Concentrate—85" gives you the highest concentration of formaldehyde commercially available.

LESS STORAGE CAPACITY

for a given amount of active materials. Water content of "U.F. Concentrate—85" is a minimal 15%.

LESS MATERIALS HANDLING

because formaldehyde is of high concentration with urea in liquid form.

Allied Chemical

You'll find more details in Allied's 36-page brochure "U. F. Concentrate—85." Write for it.

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Ammonium Nitrate • Sodium Nitrate • Methanol • Nitrogen Solutions • Nitrogen Tetroxide • Fertilizers & Feed Supplements

NITROGEN DIVISION • DEPARTMENT UF 4-7-1 • 40 RECTOR STREET, NEW YORK 6, NEW YORK

AA Quality Chemicals

AA Quality Phosphoric Acid helps quench a nation's thirst

WIDELY used by leading manufacturers of soft drink flavors, AA Quality Phosphoric Acid is recognized for its high standards of purity and uniformity. It is made under rigid quality control from 99.9% pure Elemental Phosphorus . . . a product of our own electrothermal process plant and our own ample reserves of phosphate rock.

Our Research Department may be able to help you solve problems concerning phosphoric acid in its various uses and grades . . . or any of the other AA Quality organic or inorganic phosphates. For information, please write on your company letterhead.

The **American Agricultural Chemical** Company

Chemical Division: 50 Church St., N. Y. 7, N. Y. • 33 plants and offices serving U. S., Canada, Cuba

AA QUALITY® PHOSPHORUS PRODUCTS

PHOSPHORUS AND PHOSPHORUS COMPOUNDS
Elemental Phosphorus (Yellow-White)
Phosphorus Red (Amorphous)
Phosphorus Pentasulphide • Sesquisulphide
Ferro Phosphorus (Iron Phosphide)

PHOSPHATES
Disodium Phosphate • Trisodium Phosphate
PHOS-FEED® BRAND Dicalcium Phosphate

PHOSPHORIC ACID
85% N.F. Grade • 75% Pure Food Grade
50% Pure Food Grade
Agricultural and Other Grades

PHOSPHATE ROCK & FERTILIZERS
All grades Florida Pebble Phosphate Rock
Superphosphate
Complete Fertilizers
Agrinite®

OTHER AA QUALITY PRODUCTS

FLUORIDES & SILICOFLUORIDES
Sodium Fluoride
Ammonium Silicofluoride
Magnesium Silicofluoride
Potassium Silicofluoride
Sodium Silicofluoride
Zinc Silicofluoride
Silicofluoride Mixtures
Magnesium Fluoride

GELATIN
KEYSTONE® Gelatin: Edible, Photographic Pharmaceutical, Technical

OTHER PRODUCTS
Animal Bone Charcoal
Bone Black Pigment (COSMIC® BLACKS)
Bone Ash
Bone Oil
Keystone Ammonium Carbonate
Sulphuric Acid

Technology
Newsletter

CHEMICAL WEEK
May 10, 1958

Flexible ceramic-coated copper wire—highly heat-resistant—was described last week at the annual meeting of the American Ceramic Society in Pittsburgh. The product of a combined research effort by ceramic specialists at Battelle Memorial Institute (Columbus, O.) and at General Electric Co.'s Fort Wayne, Ind., laboratory, the coating is described as a porcelain enamel fired on the wire in a controlled-atmosphere furnace. Coated wire can be produced on a continuous, production-line basis; the process is claimed to compare favorably—on a cost basis—with current commercial systems for insulating wire with conventional organic coatings. The wire is currently undergoing pilot-plant evaluation.

A similar product—Ceramicite-coated wire—will be produced commercially by Sequoia Wire & Cable Co. (Redwood City, Calif.) and Hitemp Wires, Inc. (Westbury, N. Y.), both of whom recently completed nonexclusive licensing arrangements with Consolidated Electrodynamics Corp. (Pasadena, Calif.). Ceramicite coatings include a number of different ceramic compositions that withstand continuous operation at temperatures to 1000 F. They can also be used, says CEC, to bond electronic components, such as transistors, diodes and relays, that must withstand extreme environmental conditions.

•

Cause of the explosion at Union Carbide Chemicals' Texas City oxygen plant a few weeks ago (*CW Business Newsletter, Apr. 5*) was apparently the ignition of combustible waste material in a covered trench. Evidence indicates, says UCC, that there may have been a high concentration of oxygen in the trench, but because of the extensive damage and lack of first-hand stories from witnesses the source of ignition is unknown.

But it's quite clear, the company adds, that the explosion didn't occur within the plant's oxygen-producing equipment; the production unit sustained only external damage from flying debris. At the time of the blast, operators were draining liquid oxygen from one of the two columns preparatory to thawing it out for routine maintenance and inspection. Phone contact with the operators three minutes before the accident, plus recovered evidence, indicates that the operation was proceeding satisfactorily according to a written schedule of the proper sequence.

Suspected starting point of the explosion: a leak in the oxygen drain line that entered the trench about 20 ft. from the point where the explosion occurred. In rebuilding the plant, says UCC, this trench will be eliminated.

•

Recovery of commercial radioisotopes from radioactive wastes stored underground at AEC's Hanford, Wash., plant will be piloted in a soon-to-be-constructed $150,000 plant. Dr. H. M. Parker, chief of production facilities at Hanford, says that extraction processes have been

developed and are "about ready to go into the pilot-plant stage." First work will be done on nonradioactive material to develop the remote-control equipment for packaging, with work on the "hot" wastes not expected to start until next year. Hanford currently ships some isotopes (mostly cobalt-60, with smaller quantities of radioactive thallium, silver, cerium, iron, mercury, antimony, tin, tantalum, tungsten, zinc and carbon) to AEC's Oak Ridge Laboratory for packaging and sale. Last year it produced products equivalent in radioactivity to 460 lbs. of radium.

•

Direct conversion of fusion energy into electrical power is the goal of Britain's newest fusion experiment: Zeta Mark II.

Sir John Cockcroft, director of atomic research at Harwell, last week said that Zeta II is designed to develop fusion temperatures as high as 100 million degrees—the break-even point in the balance between input and output energy levels. If direct conversion is achieved in Zeta II, Cockcroft added, the next step would be the construction of a prototype fusion power plant aiming for a torus current of several million amperes.

Britain's first Zeta reactor *(CW, Feb. 1, p. 20)* is currently being modified to provide more than 10 times its original energy input. The stepped-up version will be used to study improved torus design and new methods of stabilizing the axial field.

•

Fluosolid techniques are being readied for new processing applications, according to Richard Hyde, senior process metallurgist at Arthur D. Little (Cambridge, Mass.). At a special seminar on mineral technology in San Francisco last week, Hyde discussed the Esso Research-ADL process (under development for two and a half years) for direct reduction of iron ore. ADL has completed its development program with a 1-ft.-diameter, pilot-plant reactor, will soon construct and operate a 5-ft.-diameter semi-commercial unit.

Advantages of fluosolid reduction of iron ore: it can be used wherever natural gas is available; it can be employed economically in units that are relatively small compared with the blast furnace, which must be big to be economical.

Fluidized-bed calcining of cement clinker by the Pyzel process (*CW, Feb. 16, '57, p. 108*) is also being readied for commercial-scale tests this summer by the Fuller Co. (Catasauqua, Pa.).

•

More effective and less costly weed control in farm crops is foreshadowed by preliminary results of USDA tests on a new herbicide. The new compound—ethyl N,N-di-N-propylthiol carbamate (EPTC)—reportedly will control annual grasses, broadleaf weeds, but won't injure crops such as tomatoes, strawberries, certain vegetables.

BRIEFS for buyers of

Caustic Potash
Phosphorous Acid
Sulfur Chlorides
Cl_2 Wall Chart

Caustic potash—why the package is important

Expose it to air and solid caustic potash soaks up moisture and carbon dioxide swiftly, making the chemical weak and slow acting.

To help you avoid this and to protect the inherent purity of Nialk® caustic potash, we make our own containers to our own rigid specifications.

You can get this exceptionally pure anhydrous caustic potash in any of seven forms at 90% strength or in flake or solid form at 85%. Or you can order the liquid form in strengths from 45% to 52%.

Check the coupon for more complete information.

H_3PO_3
what *can't* you do with it?

Reducing agent, catalyst, plating assistant, intermediate—there's almost no end, it seems, to the tasks you can tackle with *phosphorous acid*, H_3PO_3.

Produced in glass equipment, this Oldbury® product comes to you as a 70% clear water-white aqueous solution, or as a white crystalline flake assaying 97% min., deliquescent and very soluble in water.

We're uncommonly proud of the flake form, which is presently saving one of our customers $45,000 a year in processing costs.

A strong dibasic acid, H_3PO_3 goes into phosphite salts used as plasticizers. It can serve as a catalyst in ether formation, and, possibly alone or with other catalysts, in cross polymerization of olefins and in alkylation of aromatics.

You can use it to deposit nickel and cobalt phosphides in plating; and to prepare dialkyl phosphites.

Are you planning any of these operations? If you feel that H_3PO_3 might ease a problem, use the coupon to request specifications and typical properties. Better still, write us on your business letterhead for a sample.

Sulfur chlorides—*mono-* or *di-*?

Is there an advantage to using a sulfur *mono*chloride and chlorine mixture in place of sulfur *di*chloride?

Yes.

You can purify the *mono-* by simple distillation should you want to. And you can store *mono-* for long periods without gas pressure developing in the container.

Will *mono-* do what *di-* will do? Yes, usually. Actually, you can consider sulfur *di*chloride as a mixture of sulfur *mono*chloride and chlorine.

Naturally, we'll be happy to sell you either the *mono-* or the *di-* as well as our other chlorinating agents, chlorine, sulfuryl chloride, thionyl chloride, and muriatic acid.

Our bulletin on some of these chemicals, *Hooker Chlorinating Agents*, is offered in the coupon. Also available are our technical data sheets on two other chlorinating agents, phosphorus trichloride and phosphorus pentachloride.

New wall chart
helps you handle chlorine safely

A useful addition to your plant safety program is this new Hooker chlorine wall chart.

It can help prevent accidents by showing your employees the most important do's and don't's for handling chlorine. In concise, easily understood language, it explains the operation of tank car, ton container, and cylinder valves; describes safe storage methods; and tells what to do in an emergency.

If you'd like a copy of the chart for posting, ask your Hooker salesman or check the coupon.

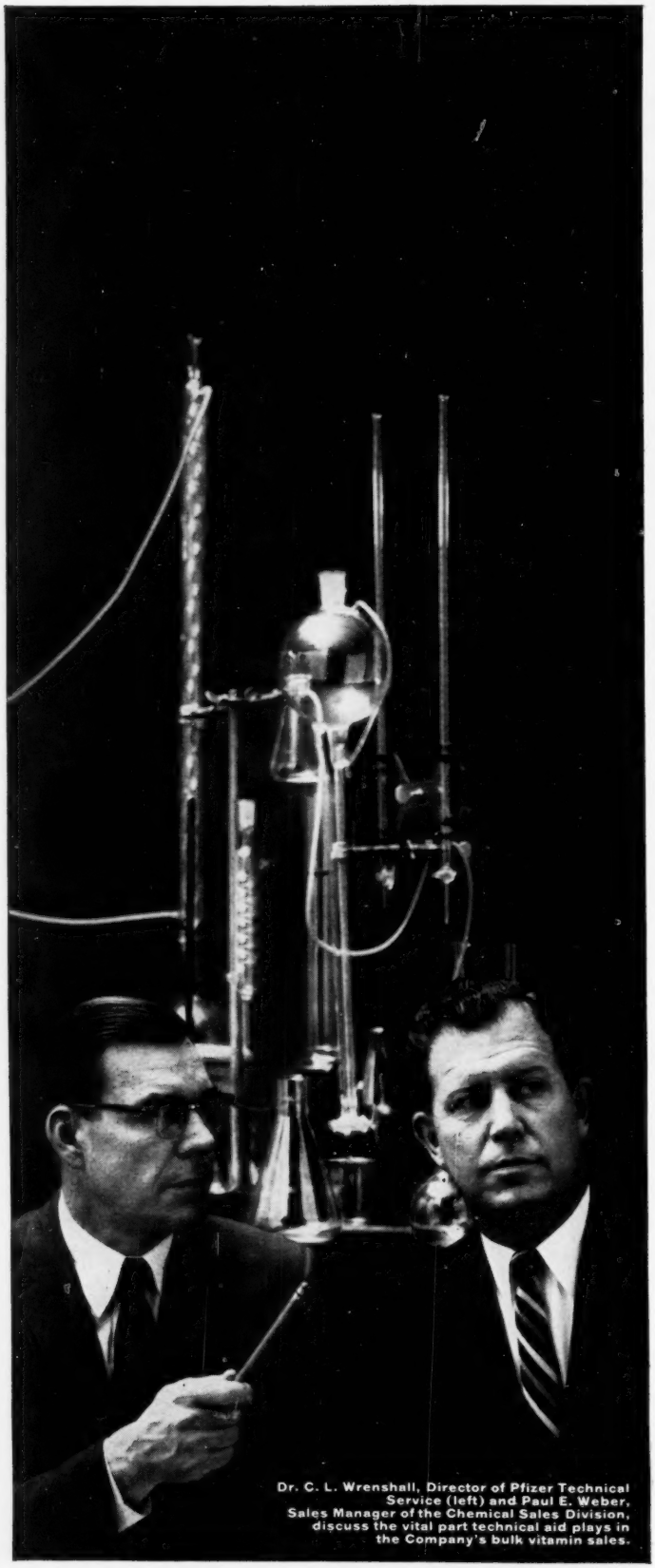
For more information on chemicals mentioned on this page, check here. When requesting samples, please use business letterhead.

- ☐ Caustic Potash
- ☐ Chlorine Wall Chart
- ☐ Chlorinating Agents, Bul. 328-A
- ☐ Sulfur Monochloride
- ☐ Sulfur Dichloride
- ☐ Phosphorous Acid
- ☐ Phosphorus Trichloride
- ☐ Phosphorus Pentachloride

HOOKER ELECTROCHEMICAL COMPANY
705-1 Forty-seventh Street, Niagara Falls, N. Y.

Sales Offices: Chicago Los Angeles New York Niagara Falls Philadelphia Tacoma Worcester, Mass.
In Canada: Hooker Chemicals Limited, North Vancouver, B. C.

HOOKER CHEMICALS PLASTICS



Dr. C. L. Wrenshall, Director of Pfizer Technical Service (left) and Paul E. Weber, Sales Manager of the Chemical Sales Division, discuss the vital part technical aid plays in the Company's bulk vitamin sales.

Question:

WHAT'S BEHIND PFIZER B_6?

Answer:

PFIZER TECHNICAL SERVICE.

How a Customer's Problem Was Solved

● Not long ago, a customer called Pfizer and expressed interest in a product for atherosclerosis that would contain a vegetable oil and vitamin B_6. He was looking for background on the relationship between this vitamin, so important in metabolism of unsaturated fatty acids, and reduction of blood cholesterol levels.

Pfizer Technical Service compiled and analyzed the available information on the subject and sent it to him.

Subsequently, the customer formulated a new product but encountered a problem in the development stage. Again he called Pfizer for help. This time his problem was resolved with a rapid B_6 assay plus discussion of the results with one of Pfizer's Technical Service representatives.

Needless to say, he was a satisfied customer. One of the many who took profitable advantage of Pfizer's 22 years of experience with vitamins. You will be satisfied, too, if you come to Pfizer with your B_6 needs.

Pfizer offers the following technical assistance on vitamin B_6:

1. Formulation information on new products
2. Cooperative stability studies on your product during developmental stages
3. Check-assays during product development
4. Technical literature
5. Trouble shooting on existing products

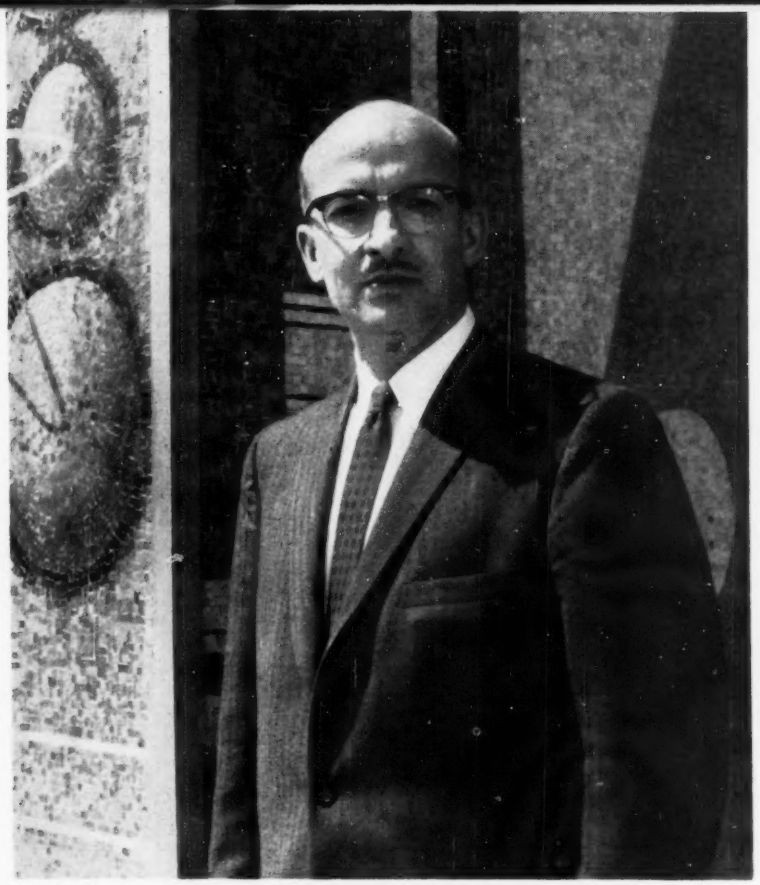
The Chemical Sales Division's bulk medicinal line includes vitamins (A, B-complex, C), antibiotics, hydrocortisone, caffeine, L-Lysine, etc. Behind all of these stands Pfizer's Technical Service.

CHAS. PFIZER & CO., INC.
Chemical Sales Division
630 Flushing Ave., Brooklyn 6, N.Y.

Branch Offices: Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Tex.

Manufacturing Chemists for over 100 Years

Pfizer



C-S's Franklin Strain and staff play key roles in firm that's . . .

Driving for Diversification

In a new, multimillion-dollar research laboratory, dedicated last week, Columbia-Southern Chemical Corp. demonstrated some of the developments vital to its plan to diversify.

A long-time major producer of chlorine, caustic, and soda ash, Columbia-Southern (a Pittsburgh Plate Glass subsidiary) has been edging into other allied fields (e.g., titanium tetrachloride) at a deliberate pace in recent years. The new center, at Barberton, Ohio, is intended to quicken the company's steps in the direction of new products and ideas.

Although far from limited to research in applications of chlorine, C-S is not overlooking any bets here. One project concerns chlorine processing of refractory ores, such as Cuban laterite ore—said to constitute one of the largest nickel reserves in the world. High in iron content, low in nickel and cobalt, the ore is already being processed by Freeport Sulphur. There's a chance, though, that chlorination and subsequent fractional condensation of the desired metal chlorides might be feasible.

Another chlorine outlet is shaping up in a new benzene hexachloride process, now being pilot-planted at Natrium, W. Va. Most likely to limit this outlet, Columbia-Southern feels, is the growing immunity of cotton boll weevils to BHC.

Polymer Progress: Laboratory director Franklin Strain isn't centering all investigations around his company's basic products, however. His staffers are looking for new polymers —both organic and inorganic—to do fundamental work in high-temperature reactions (including work with a 5000 F arc), and pursuing a variety of other chemical projects.

The inorganic polymers currently being studied are those of boron-nitrogen and titanium-carbon.

Columbia-Southern isn't saying more than that, except to add that it doesn't intend to limit itself to these combinations.

Polycarbonate Competition: C-S isn't so reticent about its polycarbonate research. Aromatic polycarbonates, now under development, could be new competition for General Electric's Lexan (*CW, April 6, '57, p. 96*) and Bayer's bisphenol-A polycarbonate (Macrofol). The plastic's high strength and high softening- and heat-distortion temperatures help make it a particularly attractive commercial prospect, in the company's opinion. It's considered a top candidate for such assignments as motor and instrument housings, electrical parts, and precision moldings.

In aliphatic polycarbonates, the firm is researching other heat-stable and scratch-resistant resins. It has been making allyl diglycol carbonate (CR-39) since '41, has seen it grow in specialty applications because of its glasslike clarity, and heat, chemical, solvent, and abrasion resistance. Right now, the resin is being used mainly in ophthalmic lenses, sun glasses, and instrument crystals.

A new polyglycol carbonate is getting special attention. One of a series under investigation, it's a medium-molecular-weight viscous liquid that has proved useful as a constituent of polyurethane foams.

Catalyzed Interest: New catalysts and intermediates are also on C-S's investigation list. Diisopropyl peroxydicarbonate (IPP) is an effective catalyst for polymerization of unsaturated monomers at relatively low temperatures. It reputedly gives exceptionally transparent and color-free polymers with C-S's CR-39, also with vinyl acetate and methyl methacrylate. It is now under study for producing polyethylene.

Another polymerization catalyst under development is titanium trichloride—an offshoot of Columbia-Southern's titanium tetrachloride production near New Martinsville, W. Va. It's intended for use in stereospecific catalysis systems.

Intermediates, Too: An idea of the firm's plastic-intermediate research can be gleaned from some of its new products. Diethylene glycol bis-(chloroformate), a recent item, has been shown to polymerize with diunsaturated monomers, carbamates, etc. Two other new products, butadiene monoxide (3,4-epoxybutene-1) and technical dihydroxycyclopentene (a

For safer, easier equipment cleaning . . .

DRY ACID CLEANERS

based on Du Pont Sulfamic Acid

New cleaning compounds made with sulfamic acid are sold and handled *dry*—no hazardous liquids to ship or store. Dry or dissolved in water for use, they create no fumes. Yet these cleaners have all the penetrating power of hydrochloric acid with far less corrosive effect.

Sulfamic acid-based cleaners remove scale and deposits from air-conditioning and ice-making equipment, food-processing vessels, steam boilers, milk evaporators and pasteurizers, marine evaporators and heat exchangers. Cleaning action is fast, thorough.

We'll gladly send you more information on sulfamic acid-based cleaners and the names of formulators who offer these new compounds. Just mail the coupon below.

DU PONT
REG. U.S. PAT. OFF.
Better Things for Better Living
. . . through Chemistry

Du Pont
SULFAMIC ACID

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Dept., Rm. N-2533C
Wilmington 98, Delaware

Please send me: □ sulfamic acid general equipment-cleaning bulletin; □ names of formulators offering cleaners based on sulfamic acid.

*Name*_____

*Company*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

RESEARCH

mixture of 3,4-dihydroxycyclopentene-1 and 3,5-dihydroxycyclopentene-1) also are claimed to produce synthetic resins.

These are just a few of the projects at the company's new labs. Columbia-Southern is looking at additional product possibilities for its customers in the rubber, paper, metals, glass and other industries, and in agriculture.

One project, colored tires for automobiles, still hasn't had the reception the firm had hoped for. Working with neighboring Seiberling Rubber Co., C-S researchers have produced bright-hued tires which use a special hydrated silica (made by Columbia-Southern) instead of carbon black in the treads.

No matter how the tire project eventually turns out, Columbia-Southern researchers seem to have enough other tricks in their labs to insure success in some phase of their diversification program.

PRODUCTS

Dysprosium Metal: Nuclear Corp. of America (Burbank, Calif.) is out with dysprosium metal in commercial quantities, offers it in one gram to one lb. lumps or ingots. Suggested uses: magnetic alloys for electronic devices.

•

Superpure Aluminum: Reynolds Metals Co. (Louisville, Ky.) has commercial quantities of 99.99% pure aluminum, will market it in 7-lb. ingots. The metal is suggested for research in catalytically refining high-octane gasoline.

LITERATURE

• *Express Contents of Soviet Journals*, a new monthly guide to upcoming English translations of 39 Russian scientific journals, will include a translated listing of each of the magazines' tables of contents. Consultants Bureau Inc. (New York) offers this service for $25/year, says it will give researchers knowledge of still-in-process Russian translations, from two to six months in advance of availability of the full translations.

• *Thermal Properties of Ceramics* is available for 75¢ from the Bureau of Engineering Research, College of Engineering, Rutgers University, New Brunswick, N.J. The publication, called Research Bulletin #40, describes research findings in ceramic

A big promise—the *multiwall of TOMORROW!* But rigorous tests, both in laboratory and actual use, show that Bemis Multiwalls made with the revolutionary new extensible kraft offer the biggest multiwall development in years.

Testing still goes on. We can document more and more of the qualities of Bemis extensible bags . . . and we are learning more about which industries they will serve beneficially.

(Normally, an announcement of this kind would be held up until all tests are completed, but this development is so important, and final reports are so near, that you should be alerted.)

We can say positively, though . . . *the adaptability of Bemis Extensible Multiwalls for the chemical industry has been definitely proved. They will give you superior service, probably at a cost no greater than your present bag cost, maybe at a saving.*

You will certainly want to get the *complete* story about Extensible Multiwalls from your Bemis Man. And you will want to order a trial quantity—possibly 5,000 bags as a starter—in an early shipment of Bemis Multiwalls. Supplies will be somewhat limited until full production of the new paper develops. Meanwhile, all Bemis customers will, of course, get an "even shake."

You will be well advised, though, to get acquainted with Bemis Extensible Multiwalls as soon as possible . . . to learn how they fit into *your* operation.

WHAT IS EXTENSIBLE KRAFT PAPER?

It is sturdy kraft that is given a special mechanical treatment, during manufacture, to provide special qualities that are particularly desirable in Multiwall bags. This paper is made by West Virginia Pulp and Paper Company under the trade name "Clupak." "Extensible" means that it has a definite, though almost imperceptible, "stretch" *in both directions.* The "stretch" provides the qualities that make for better multiwall bags. (Note—This is *not* a *creped* paper.)

WHAT ARE THESE SPECIAL QUALITIES?

1. Because of the "stretch," it is stronger . . . more resistant to shock and breakage. Consequently, a lighter construction will provide an equally strong bag. (Paper weight can, in some cases, be reduced 20% or more without reducing strength.)

2. Although perfectly smooth to the touch, it has a "soft hand" and is easier to hold and handle.

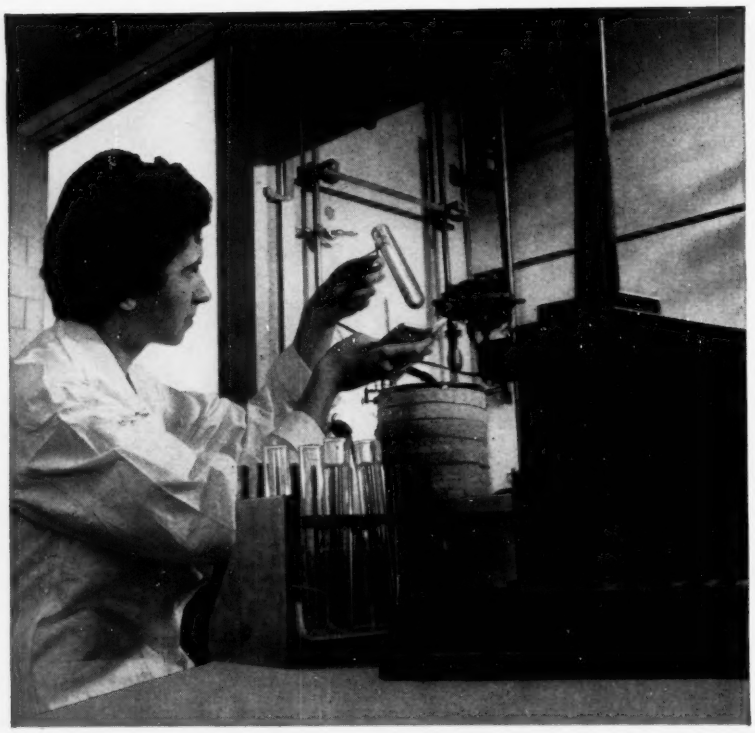
3. Easier on the workman's hands.

4. Better stacking and storage, without slipping.

5. It gives added resistance to scuffing and abrasion.

Bemis

General Offices—408 Pine St., St. Louis 2.
Sales Offices in Principal Cities



GROCOL 600

by all tests, the best Hydrogenated Tallow Glyceride

Strict quality control in the manufacture of GROCOL 600 Hydrogenated Tallow Glyceride has established a new benchmark for the industry—an iodine value of below 0.5.

This indicates extremely low unsaturates and assures correspondingly long shelf life for your products—whether quality plasticizers, esters, lubricants or finishing agents for leather or textiles.

Lightness of color is unexcelled. Stability under heat is outstanding. In a recent test, production samples of GROCOL 600 gave a Lovibond reading of 0.2 red and 1.3 yellow before an A.O.C.S. method heat test, and a reading of 0.2 red and 2.2 yellow afterward.

Free fatty acid content is well under 0.5% with an average below 0.25%. Unsaponifiables are 0.25% maximum. Odor is bland.

Your payoff in sales will improve if you "Always specify A. Gross" Hydrogenated Tallow Glyceride—GROCOL 600. You can see why.

Send for samples and brochure, "Fatty Acids in Modern Industry."

FATTY ACIDS

Stearic Acids • Red Oils • White Oleines
Tallow Fatty Acids • Coconut Fatty Acids • Vegetable Fatty Acids
Hydrogenated Fatty Acids • Hydrogenated Tallow Glycerides

a. gross & COMPANY

295 Madison Ave., N. Y. 17, N. Y. • Factory: Newark, N. J.
Distributors in principal cities • Manufacturers since 1837

RESEARCH

dielectrics during the past 12 years. It cites melting and operating temperatures of ceramics, thermal endurance of dense ceramics and thermal conditioning.

EXPANSION

• R. J. Reynolds Tobacco Co. (Winston-Salem, N.C.) has added a $2-million wing to its research lab at Winston-Salem, will increase work with radioisotopes.

• Dayton Rubber Co. (Dayton, O.) is conducting basic research and product development of urethanes at its new Freedlander Research and Development Laboratories at Hawthorne, Calif.

• Biochemical Procedures Inc. (North Hollywood, Calif.) has turned the spade on a new $175,000 lab and office building, will move from Beverly Hills, Calif.

• Wyeth Laboratories (Philadelphia) plans to increase its basic research facilities 65% by spring of '59, is building a new lab at Radnor, Pa.

• Canada Industries Ltd. (Montreal) has purchased 200 acres near St. Hilaire, Canada, for a new research center. CIL now has the largest company research facilities in Canada.

• Foote Mineral Co. (Philadelphia) has set '59 as starting time for construction of a new technical center near Exton, Pa.

• Pacific Vegetable Oil Co. (San Francisco) has opened its new lab in Richmond, Calif., will investigate urethane foams, linoleic acid, methyl esters.

• Du Pont Co. of Canada Ltd. (Montreal) is building a new $300,000 research center at Kingston, Ont., will research low-pressure polyethylene resins and nylon resins.

• Horizons Inc. (Cleveland) has expanded its vacuum gas-analysis facilities, has made them available to industry. Horizons offers the service of quantitative oxygen and hydrogen analysis in metals.

• American Zinc Institute Inc. and the Lead Industries Assn. have launched a joint research program aimed at increasing consumption of their respective products. The research will be sponsored by zinc and lead producing companies in the U.S., Canada, Mexico, England, South America and Australia.

Wonder Drug? No...

he's analyzing soil at the site of your new plant

Finding the right location for a new plant is not a problem of land availabilities alone. It is complicated by many other factors—natural resources, labor, power, taxes, zoning laws, community facilities—a thousand and one details.

That's where we can help you.
To secure accurate advice in these fields North Western taps the resources of its *entire organization.* That's why we can supply information on any subject from sewer lines to school facilities and *guarantee* the accuracy of the details.

North Western offers a complete and comprehensive Industrial Site Service. Here are some of the things we do (there are many more):

- Analyze topography, soil and water conditions
- Report in detail on labor, power and all other utilities
- Investigate all tax and zoning laws
- Check proximity of raw materials required
- Report on market accessibility and complete marketing area
- Factual report on all community facilities
- Condition the community for industry acceptance
- Furnish complete information on rail, air, truck and water transportation

Call us in when plant expansion is being discussed in your company. No obligation for this service, and all inquiries are confidential. Address:

GENE F. CERMAK
Director of Industrial Development, C. & N. W. Ry., 400 W. Madison St., Chicago 6, Illinois

CHICAGO AND
NORTH WESTERN
RAILWAY

A REVOLUTION IN RARE EARTHS

Costs down sharply... large quantities available

a report by LINDSAY

Today you can buy at $50 per pound Samarium Oxide of 99% purity which in 1955 cost $1825—a price reduction of 97%, almost unprecedented in the chemical industry.

All high purity rare earths are priced substantially below the 1955 levels. Price ranges for four oxides, over a three-year period, are shown in the graphs.

During 1954, there was a rapidly developing industrial interest in high purity rare earths which were available then only in small, laboratory-production quantities and at very high prices.

In 1955, Lindsay pioneered the first commercially installed ion exchange pilot plant with 40 six-inch columns for the production of rare earth oxides in purities up to 99.99%. As these materials became available, the response from industry demonstrated that much larger production facilities were urgently needed.

LINDSAY EXPANDED PRODUCTION

Consequently Lindsay immediately expanded its ion exchange plant and is now operating continuously more than 100 columns with large production units of eighteen-inch and sixty-inch diameters.

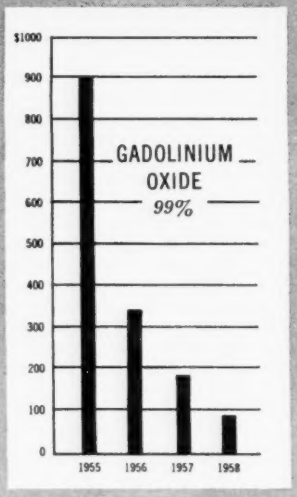
With large volume production, we can now make prompt shipments of high purity materials in quantities from a gram to hundreds of pounds.

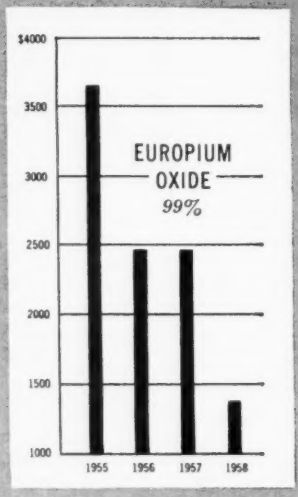
Current prices make high purity rare earths extremely attractive and economically sound for a wide variety of chemical and industrial purposes.

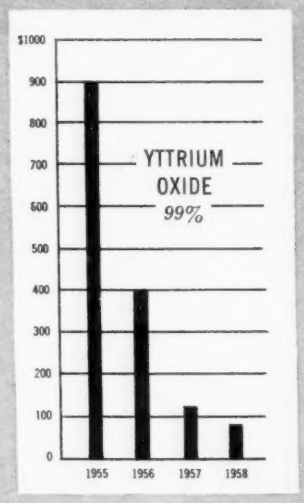
We will be happy to supply technical data and information about availabilities, prices and industrial applications.

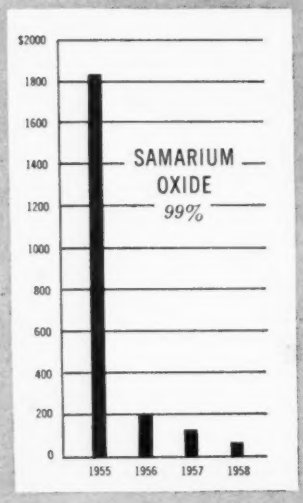
THREE YEAR DECREASE IN SELLING PRICE

in dollars per pound









PLEASE ADDRESS INQUIRIES TO:

LINDSAY CHEMICAL COMPANY

World's Largest Producer of Thorium and Rare Earth Chemicals

270 ANN STREET • WEST CHICAGO, ILLINOIS

Market Newsletter

CHEMICAL WEEK
May 10, 1958

Today, total U. S. polyethylene capacity exceeds demand by an estimated 150-200 million lbs./year. But if hard-pushing marketers continue to wedge into new outlets, that excess will be needed within a couple of years.

Unveiled in New York last week, for instance, was a new thin-walled cosmetic container that's expected to help jack the potential market for polyethylene in the packaging field to well above 350 million lbs./year by '60.

The added contender in the container race was blow-molded by Plax Corp. with Hercules Powder's high-density (Hi-fax) polyethylene. Says Elmer Hinner, general manager of Hercules' cellulose products department: It can be designed to "weigh only three-fourths as much as a corresponding regular polyethylene container, one-third as much as a metal unit, and only one-eighth the weight of a glass bottle."

In addition to the obvious savings in freight costs, Hinner points out, "costly space-consuming protective packaging normally required in shipping" is eliminated with the new light-weight container.

An extra-thick polyethylene sheet is just about ready to challenge other materials for a share of the heavy packaging market. Trade talk has it that a heavy-wall (10-mil) polyethylene bag will soon be revealed. It's aimed as competition for multiwall bags, drums, and barrels in bulk material shipping.

No details yet, but use tests reportedly indicate that breakage percentages on the new polyethylene bags have been less than with multiwall paper containers.

Phillips Petroleum is touting a new series of polyethylenes, said to "greatly expand potential markets" in four important fields: monofilaments, wire coating, bottles and containers, and injection molding. Basically, says Phillips, its new Marlex polyethylenes are superior in long-term load-bearing characteristics.

•

Incoming foreign cargo—$7-8 million worth—has been tied up in the Lake Michigan-Chicago port since the weekend. Reason: a lake pilots' strike; sympathetic Chicago longshoremen have refused to unload the vessels. Because of the 11 loaded ships waiting in the harbor, outgoing goods were accumulating in terminals.

Chemical producers—Dow, Monsanto and Victor, for example, ship out of the Great Lakes ports—weren't too concerned over the delay. Should the strike drag out, though, there will be some problems.

Ammonium sulfate supply continues to be pinched by lagging steel production, but consumers' earlier fears that prices would be squeezed upward by the "shortage" are abating *(see also p. 82)*. Such price action now, say market observers, is unlikely because the buying season is too far advanced.

Another deterrent: some fertilizer formulators are using substitutes for the sulfate, and other ag chemicals are in ample supply.

Anhydrous ammonia sales are moving well, particularly in Midwest markets. Fact is, most sellers are pegging hopes on the present strong demand to help make up losses sustained by this spring's earlier unfavorable planting weather (*see also p. 21*).

•

Another move in the direction of the textile market is the way Dow describes its new textile material tagged "Q-957." It's a "thin, narrow tape, still in the development stage," says Dow. Applications in the industrial, automotive, agricultural, home furnishing and decorative fields "are being considered."

Dow is mum on composition of Q-957, but trade talk tabs the material as a vinyl chloride derivative. (Incidentally, Zefran, the company's acrylic alloy fiber, is to be launched in apparel application this fall.)

•

The government will put $224 million into a new helium program. The president has okayed spending that much on the long-range helium policy Interior Secy. Fred Seaton and his top aides have been working on for nearly a year *(CW Market Newsletter, May 18, '57).*

Aim of the program: to interest private industry in building needed new capacity for extracting helium from natural gas flowing to industrial markets. This helium is now wasted. Seaton says he will offer "inducements" to gas pipeline distributors, chemical firms, and others, to undertake financing, construction and production of 12 new helium-extraction plants near Amarillo, Tex.

Seaton also made it clear that the Administration will back a federal construction program, if industry balks at taking on the job.

Government lawyers are already drafting a bill to amend the helium act (of 1930) to allow purchase contracts offering private investors a "guaranteed" market at a profit—or similar inducements. The Interior Dept. is ready to talk with industrial firms about their getting into the business.

Seaton's request for a fifth government helium plant is pending at the White House. If it's approved, it'll mean a new 240-million-cu.ft./-year unit at Colorado Interstate Gas Co.'s natural gas field at Keyes, Okla. Output is slated to meet the fast-expanding needs of the missiles and atomic power programs.

BECCO's high-purity Peracetic Acid is available for immediate delivery!

Seems that there are still a few people who don't know they can get immediate delivery on high-purity Peracetic Acid. Fact is, commercial quantities of Becco's Peracetic are available right now, in a solution of the following typical composition—uncontaminated with any other organic material:

CH_3COOOH	40%	CH_3COOH	39%
H_2SO_4	1%	H_2O	15%
		H_2O_2	5%

(Plus a stabilizer, 500 ppm)

Becco research has studied many epoxidation techniques and stands ready now, as always, to help you use high-purity Peracetic Acid to meet your particular epoxidation requirements. For example, under reaction conditions developed by Becco, high yields of epoxides are obtainable from a wide variety of difficult-to-epoxidize olefinics.

Moreover, this versatile oxidant has proved superior in the production of amine oxides, sulfones, metal salts, etc. Becco Peracetic Acid is also widely used as a bleaching agent, as a germicide, and as a polymerization catalyst.

The essential points to remember are these: If you are currently using Peracetic Acid, rely on Becco as *the* source for the *high-purity* product. If you are not now using Peracetic, but would like to investigate its use in epoxidation reactions (or the use of H_2O_2, for that matter), Becco research will work with you—and there's no obligation on your part. Feel free to consult us.

In the meantime, you will find the following bulletins of interest—they're free at your request:

BULLETIN No. 4 – Peracetic Acid 40%

BULLETIN No. 69 – Epoxidation and Hydroxylation with Becco Hydrogen Peroxide and Peracetic Acid.

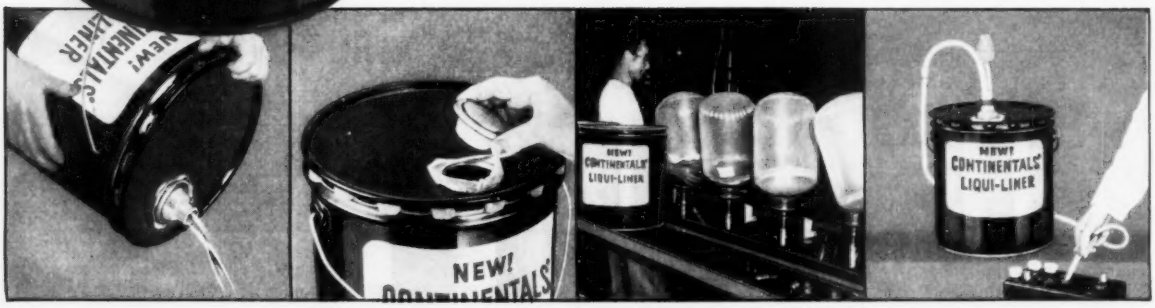
Progress in Peroxygens ®BECCO

BECCO CHEMICAL DIVISION • Food Machinery and Chemical Corporation
Station B, Buffalo 7, New York

fmc FOOD MACHINERY AND CHEMICAL CORPORATION ®

FMC CHEMICALS INCLUDE: **BECCO** Peroxygen Chemicals • **WESTVACO** Phosphates, Barium and Magnesium Chemicals • **WESTVACO** Alkalis, Chlorinated Chemicals and Carbon Bisulfide • **NIAGARA** Insecticides, Fungicides and Industrial Sulphur • **OHIO-APEX** Plasticizers and Chemicals • **FAIRFIELD** Pesticide Compounds and Organic Chemicals

SAVES TIME... SAVES MONEY IN SHIPPING AND DISPENSING CORROSIVE AND HARD-TO-HOLD LIQUIDS



Splash Free Pouring! Polyethylene Flex-spout is shipped loose, attached after filling, provides splash free pouring.

Recessed Spout, Tamper Proof Seal! Spout recesses, is covered with tamper-proof seal during shipping and storage.

Tested Leakproof! Polyethylene bags are air-tested for leakage before and after insertion in pail.

Safe, Fast Dispensing! For corrosive liquids, dispensing pump is available, assuring safe, no-waste dispensing.

CONTINENTAL *Liqui-Liner*

A PACKAGE WITHIN A PACKAGE! Liqui-Liner is a five-gallon container fitted with a leakproof polyethylene bag, assembled by Continental, and shipped to the user with cover crimped on ready for filling through spout opening.

PRECISION-MADE FOR POSITIVE PROTECTION. Liqui-Liner assures positive protection for products which are corrosive or have a low iron tolerance. Heavy gauge steel container provides maximum protection against shipping damage. Custom-tailored bag fits container exactly, protects against product contamination and leakage.

SUBSTANTIAL SAVINGS! Liqui-Liner reduces shipping and handling costs! No outer carton is needed. Larger capacity means fewer containers can be used. Wide spout hole makes filling fast and easy. Recessed spout permits stacking; wire bail handle assures easy carrying.

PACKAGING CONVENIENCE AND ECONOMY! Dispensing is easier with Liqui-Liner—from dispensing pump or splash free spout. Large, smooth surface accommodates attractive lithography for permanent advertising. The empty steel container has utility use after original content has been used.

IF YOUR PRODUCTS require low-cost Liqui-Liner protection, call your nearest Continental representative for complete details.

CONTINENTAL CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare St., Montreal, Que.

Commodity	Unit	Quantity 1957	Quantity 1956	Percent Change	Dollar Value 1957	Dollar Value 1956
Chemicals, NES	...	.....	.....	9.7	$23,415,062	$21,341,453
Sodium nitrate	s.t.	584,945	500,012	4.8	17,107,478	16,336,875
Benzene	gal.	55,322,908	69,544,891	—18.4	14,516,448	17,812,820
Ammonium phosphate, fertilizer	s.t.	169,471	190,574	—11.7	11,504,968	13,034,579
Peat moss	s.t.	236,370	233,394	9.7	10,700,221	9,764,444
Medicinals, coal tar	lb.	1,400,442	1,284,344	12.0	7,889,442	7,036,978
Potassium chloride	s.t.	254,715	243,969	4.6	6,777,814	6,494,464
Dead or creosote oil	gal.	31,291,211	39,463,960	—12.2	5,965,846	6,793,531
Ammonium sulfate	s.t.	164,729	197,650	—32.6	5,920,189	8,782,577
Barytes ore, crude	l.t.	743,146	520,740	64.6	5,864,124	3,563,544
Vinyl acetate, unpolymerized	lb.	33,177,194	38,985,218	—13.2	5,667,190	6,525,940
Sodium cyanide	lb.	82,652,575	107,493,874	—15.2	5,541,319	6,542,677
Fertilizers, compounded	s.t.	69,566	32,016	117.0	5,022,019	2,318,260
Natural camphor, refined	lb.	33,577,963	22,553,972	29.3	4,720,011	3,655,157
Miscellaneous products, NES	lb.	3,299,169	1,454,545	144.0	3,774,325	1,545,653
Acetanilides, etc., not medicinal	lb.	2,961,538	2,126,630	73.5	3,739,493	2,158,276
Perfumery & toilet water containing alcohol	lb.	269,149	274,038	—3.3	3,395,907	3,513,488
Calcium cyanamid	s.t.	57,928	67,185	—9.3	3,249,590	3,587,547
Furfural	lb.	29,525,103	10,760,951	137.7	3,196,479	1,341,781
Phosphates, crude, NES	s.t.	122,692	123,078	17.4	3,090,481	2,626,226
Iodine, crude	lb.	2,685,489	1,704,868	27.1	2,768,878	2,179,857
Menthol, natural	lb.	480,645	438,383	8.2	2,615,804	2,413,323
Vinyl alcohol & derivatives, etc.	lb.	13,351,462	13,262,306	4.7	2,564,546	2,450,452
Medicinal preparations, vegetable origin, NES	lb.	509,661	41,941	160.8	2,523,688	969,274
Mixtures of odoriferous or aromatic chemicals, etc.	lb.	154,485	171,694	13.1	2,447,706	2,163,176
Coal tar acids	lb.	3,081,103	1,000,167	117.5	2,249,235	1,032,795
Calcium nitrate	s.t.	60,055	65,291	—13.2	1,856,025	2,138,585
Litharge	lb.	16,236,966	10,741,672	29.4	1,794,078	1,388,733
Fertilizer mixtures, prepared	s.t.	27,524	34,720	—17.7	1,720,345	2,087,193
Potassium sulfate, crude	s.t.	48,441	53,142	—11.5	1,699,941	1,920,712
Guano	s.t.	18,687	12,496	62.7	1,542,385	949,180
Cresols & cresylic acid	gal.	2,274,026	3,065,273	—19.3	1,474,858	1,827,369
Sodium sulfate, crude	l.t.	64,749	88,239	—29.1	1,450,383	2,046,522
Cellulose, other forms	lb.	1,278,159	602,809	111.5	1,437,148	679,270
Acetylene black	lb.	7,571,116	8,373,224	—3.0	1,341,520	1,382,546
Caffeine	lb.	679,374	611,182	10.8	1,330,351	1,201,515
Resins, phenolic, synthetic, etc.	lb.	1,210,195	986,846	63.9	1,272,677	777,229
Radium salts	mg.	126,206	43,221	70.8	1,081,291	633,195
Iron oxide & hydroxide, synthetic	lb.	14,066,170	11,993,342	19.0	1,046,139	879,200
Sodium compounds	lb.	6,318,118	5,030,850	35.5	1,044,708	771,473
Zinc oxide, etc., dry powder	lb.	10,490,658	7,333,697	35.8	1,043,629	770,156
Nonalcoholic medicinals	...	.....	.....	15.2	989,131	858,296
Dried blood	s.t.	5,293	2,508	106.5	941,613	456,481
Naphthol, derivatives	lb.	327,423	276,951	68.0	936,930	558,916
Enfleurage greases, florals	lb.	6,234	3,130	—7.8	916,833	995,660
Dextrine from potato starch	lb.	11,332,477	10,894,230	0.7	912,839	906,102
Dextrine & substitutes, etc.	lb.	7,931,007	6,445,179	23.0	900,773	732,160
Potassium-sodium nitrate mixtures, crude	s.t.	25,393	19,451	23.7	884,674	715,203

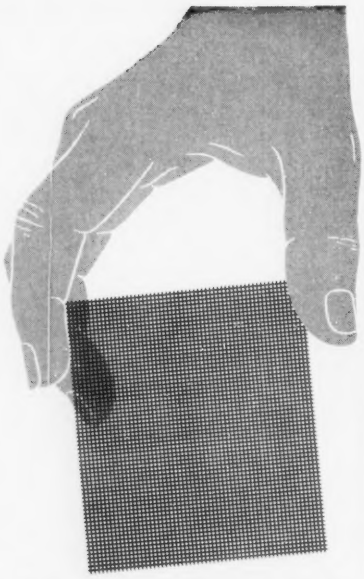
Imports: Pause in a Steady Climb

Is the pace of U.S. chemical imports slowing down? Soon-to-be-published Commerce Department figures indicate just that. They show that '57 imports increased less than one percent (to $275.6 million) over '56.

But a closer look reveals more strength; five of the seven broad chemical commodity groups increased over 4%. And of some 124 narrow-range groups (each with imports valued at over $200,000), 81 rang up increases; only 43 declined. Some 46 import groups made the million-dollar class; 23 showed increases greater than 10%; 13 decreased more than 10%.

Highlights:

Fertilizers: Depressed domestic markets continued to affect fertilizer imports which fell 5% and $5 million to a total of $97 million. Imports of



METSO SILICATES' SIZING

adds sales appeal to your compounds

When you think of the particle size of the ingredients in your compounds and detergents, remember Metso silicate alkalies. They are sized between 10 and 65 mesh. Thus, no coarse particles to slow up dissolving or to give compounds an unattractive appearance. Fines are removed to minimize dusting and eliminate caking.

Attractive and uniform Metso silicates fit your detergent formulations and also satisfy your trade. Samples of any of the silicates in the Metso line are available for your examination:

METSO ANHYDROUS • sodium metasilicate anhydrous
METSO GRANULAR • sodium metasilicate pentahydrate
METSO 99 • sodium sesquisilicate
METSO 200 • sodium orthosilicate, concentrated

PHILADELPHIA QUARTZ COMPANY
1150 Public Ledger Bldg., Philadelphia 6, Pa.
Trademarks Reg. U.S. Pat. Off.

METSO DETERGENTS

Associates: *Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif.; Tacoma, Wash.; National Silicates Limited, Toronto, Canada*

9 PLANTS • DISTRIBUTORS IN OVER 65 CITIES

SALES

Commodity	Quantity 1957	Quantity 1956	Percent change	Dollar Value 1957	Dollar Value 1956

GLYCERINE: Glycerine imports recovered from a 1956 decline, and soared up to a 33.6-million-gallon mark, a sharp 29% increase. Argentina, the Philippines and Indonesia scored the largest gallon gain. Of the major exporting countries, only Japan and Cuba failed to register increases.

Argentina	11,438,988gals.	5,952,940	65.8	$1,573,509	$949,719
Philippines	9,210,794	5,919,425	39.6	1,334,858	956,407
Cuba	3,626,829	3,567,634	—5.1	577,833	609,187
Indonesia	2,756,648	887,590	109.5	349,381	166,423
India	2,380,739	1,792,401	16.2	307,087	264,513
Japan	1,719,589	2,409,426	—32.8	245,440	365,099
Egypt	1,117,424	55,115	1678.0	133,691	7,508
Total	33,577,963	22,553,972	29.2	$4,720,011	$3,655,157

COLORS, DYES and STAINS—COAL TAR: Following the general upward trend of coal tar products, imports in this classification advanced 11% to a total value of $7 million. Switzerland boosted exports some 20% but its closest competitor, West Germany, slipped 9% behind its '56 figure. Italy, with a 64% hike, replaced the United Kingdom as third largest supplier.

Switzerland	1,682,952lbs.	1,178,668	20.0	$4,381,365	$3,656,974
West Germany	793,876	1,026,231	—8.7	2,173,806	2,378,398
Italy	93,851	60,912	63.6	152,357	93,198
United Kingdom	83,666	155,552	—24.1	126,663	166,638
France	28,032	7,354	612.0	83,050	11,658
Netherlands	27,704	250	12,900.0	64,124	493
Total	2,719,254	2,432,539	10.7	$7,001,375	$6,318,623

UREA: This basic fertilizer material declined for the third consecutive year. The drop, 26%, was sharper than the 11% fall-off in 1956 and much more pronounced than the general decline of 5% for all fertilizers. The U.K. and Italy, whose average values/short ton was less than the $92 tag for German and Norwegian material, recorded tonnage gains.

West Germany	20,896s.t.	21,243	—1.7	$1,930,561	$1,965,414
United Kingdom	22,596	20,933	—30.8	1,402,622	2,027,626
Norway	8,225	22,483	—60.5	763,085	1,933,428
Italy	5,725	3,793	48.5	446,408	299,859
Total	59,241	70,274	—25.7	$4,712,812	$6,351,080

ammonium nitrate, urea, ammonium sulfate, and calcium nitrate led the decline. Curiously, some fertilizers fared better; sodium nitrate rose to $17.1 million (up 4.8%); guano imports climbed greatly to $1.5 million (up 63%).

Industrial Chemicals: Some $84.8 million worth of industrial chemicals streamed through border crossings and coastal ports last year but the total fell short of the '56 mark by 2.4%. Sharp increases in furfural (137%), iodine (27%), sodium compounds (36%), cellulose (112%), radium salts (71%), natural camphor (29%), and a catch-all group (10%) kept the decline to modest proportions. Nevertheless, import values of unpolymerized vinyl acetate and sodium cyanide dropped about $1 million each. Sodium sulfate slid off 29%. And cobalt oxide dropped again, this time 37%, to $852,000.

Coal Tar Products: Imports of coal-derived chemicals continued to climb but at a more gradual rate than in previous years. The '57 total: $57.8 million (up 4% from '56). Medicinals and colors made gains of 12 and 11%. Phenolic resins advanced 64% and coal tar acids also forged ahead—up 117.5%, to $2.2 million. Benzene importers, running into heavier competition, handled 18% less last year. About 55 million gallons, valued at $14.5 million, entered the U.S.

Pigments, Paints, and Varnishes:

for—

..good color stability

..improved oil solubility

...try—

CARBIDE'S

MONO-, DI-, TRI-,

AND MIXED

ISOPROPANOLAMINES

...as—

...intermediates for

* DETERGENT BUILDERS
* LATEX EMULSIFIERS
* POLISH EMULSIFIERS

...stabilizers for textile resins

...solubilizers for casein

Try these isopropanolamines, too, in making preferred soaps for emulsifying "soluble" mineral oils. For additional information on these isopropanolamines and how they can make money for you, write for technical data or consult a CARBIDE Technical Representative. Offices are located in 28 principal cities. In Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal

In Addition—

to these four isopropanolamines, you can get more than 80 other nitrogen compounds from CARBIDE. Among these products are mono-, di-, and tri- ethanolamines; dimethyl and diethyl ethanolamines and six morpholines. Call your CARBIDE Technical Representative for technical data on these profit-making products—or write, Union Carbide Chemicals Company.

UNION CARBIDE

CHEMICALS

Union Carbide Chemicals Company
Division of Union Carbide Corporation
30 East 42nd Street, New York 17, N. Y.

METASAP METALLIC SOAPS FOR RESEARCH AND INDUSTRY

Whatever your industry, whatever your need in stearates, you will fill them best—fill them fast—through Metasap. Write for full information about our full line of metallic soaps. Our Technical Service Department will gladly make recommendations based upon your specific requests. Metasap Chemical Company, Harrison, N.J.

METASAP CHEMICAL COMPANY

VITAL INGREDIENTS FOR VITAL INDUSTRIES

A subsidiary of NOPCO

Harrison, N.J. • Richmond, Calif. • Cedartown, Ga.
Boston, Mass. • Chicago, Ill. • London, Canada

SALES

Commodity and country	Quantity 1957	Quantity 1956	Percent change	Dollar Value 1957	Dollar Value 1956
TRICHLORETHYLENE: Imported material is rapidly winning a place: shipments last year increased 80% over '56, reaching the 41 million lb. mark. A 1.5% decline in the average value/lb. helps account for the big boost. The lower-priced Italian and Dutch material arrived in larger quantities while more expensive imports from the U.K. and Canada declined.					
Italy	26,498,575lbs.	10,328,879	97.1	$1,669,819	$847,651
United Kingdom	5,354,917	7,336,295	—25.3	428,013	574,044
Netherlands	4,573,130	1,729,957	205.0	339,360	111,195
Canada	1,584,452	2,463,030	—30.8	220,132	318,110
Total	41,290,884	22,827,554	50.6	$2,886,509	$1,918,286
NAPHTHALENE: On the upswing again, naphthalene imports climbed 14 million lbs. over the 79 million lbs. shipped in '56. That's still far short, however, of the 122 million lbs imported in '55. Despite the poundage increase last year, imported naphthalene's dollar value inched off 7% largely because the average value fell more than one cent per lb. The Soviet Union, with an eight-fold increase, had the largest gain.					
West Germany	29,942,178lbs.	25,035,693	1.7	$1,474,332	$1,449,272
Belgium-Luxembourg	18,985,810	17,272,552	—29.3	673,748	963,727
U.S.S.R.	14,656,329	2,236,378	762.0	635,816	73,820
United Kingdom	11,165,023	12,735,377	—13.8	675,168	784,045
Poland	6,321,637	8,072,557	—48.7	245,278	477,445
Netherlands	6,220,235	6,030,689	—27.0	262,039	358,795
France	5,344,101	6,076,795	—40.7	165,122	278,297
Total	93,276,517	78,855,362	—6.6	$4,156,333	$4,446,786
AMMONIUM NITRATE and MIXTURES: Although down 22% last year, this group of products retains its rank as the largest dollar-value chemical import ($17.7 million). Italy, only country to show a gain (91%), offered material at an average value of $33.80/ton, $16.50 less than the over-all average of $50.30.					
Canada	202,070s.t.	199,310	—6.3	$11,940,347	$12,758,057
Netherlands	127,186	187,961	—37.7	4,908,185	7,881,398
Italy	14,605	7,500	91.2	493,709	257,907
West Germany	8,824	30,303	—71.2	376,396	1,311,334
Total	352,805	436,960	—21.6	$17,725,505	$22,612,762

Whopping increases in barytes ore (up 64.6%), litharge (29.4%), and zinc oxide (36%) moved this category to $12.4 million—a 31% hike. No items in the pigment group suffered significant drops.

Medicinals: Sparked by a hefty $1.5 million, 161% increase in materials of vegetable origin, pharmaceutical imports shot past the $11.6 million mark, a 28% rise over '56. An 8% boost in natural menthol imports and an 11% hike in caffeine imports accounted for much of the remaining increase.

Soap and Toilet Preparations: Stability best characterizes developments here. Despite modest drops in perfumery (3%) and enfleurage greases (8%), a 13% rise in mixtures of odoriferous and aromatic chemicals largely offset the declines, so that import value in '57 reached $9.4 million, a 6% increase for the category as a whole.

Imports in '57 would likely have lagged behind '56 if export-import houses had not begun a determined switch to imports late in the year (*CW, Oct. 12, p. 95*). But how well they will be able to maintain imports at the present level is debatable. Chances are that a continued U.S. recession will crimp U.S. imports sooner or later.

AMSCO IS FIRST

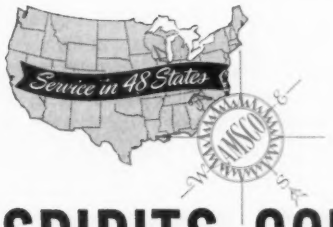
..... in service

(no wonder it's first in sales)

"Service" is a big word at AMSCO—a word with a double meaning for every AMSCO customer.

1. "Service in 48 states" means that wherever your plant is located, AMSCO can deliver solvents right to your door quickly, economically. No matter how you order, by the barge, tank car, tank wagon, or a drum at a time, AMSCO's nationwide network of terminals, refineries, and storage depots gets the shipment to you fast.

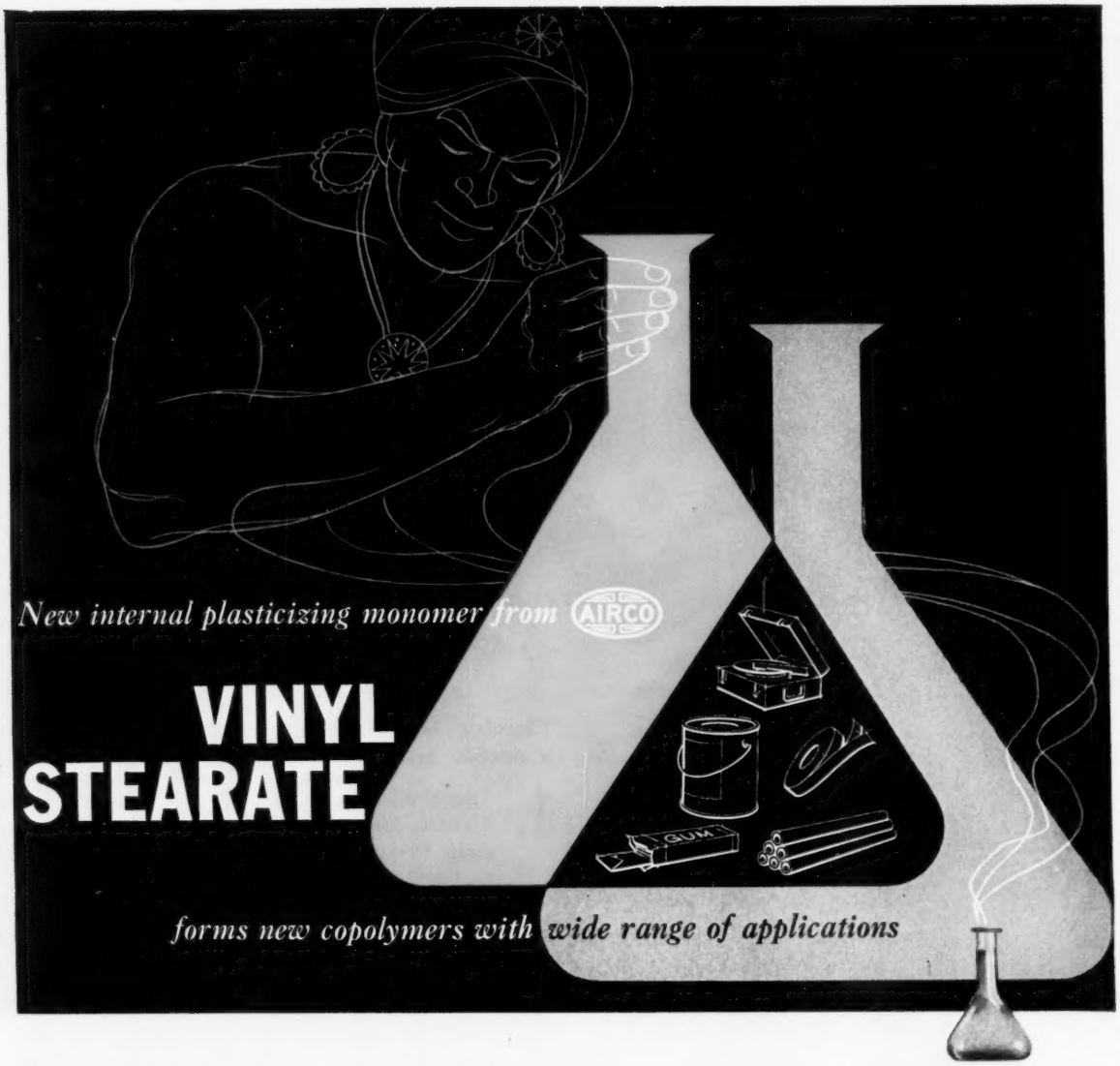
2. Service that goes beyond the sale means that AMSCO representatives are always ready to give you a hand with your solvent problems. Feel free at any time to call in one of these solvent specialists for technical aid. There is no obligation. Just write or call the AMSCO office nearest you.



AMERICAN MINERAL SPIRITS COMPANY

NEW YORK • CHICAGO • LOS ANGELES

General Eastern Offices, Murray Hill, N. J.



New internal plasticizing monomer from AIRCO

VINYL STEARATE

forms new copolymers with wide range of applications

Vinyl Stearate is a high molecular weight vinyl monomer that copolymerizes with vinyl acetate, vinyl chloride and other monomers to form copolymers with unusually versatile properties.

Vinyl Stearate copolymers have increased water resistance and greater solubility in common solvents. Vinyl Stearate imparts a high degree of flexibility to copolymers, prevents cracking or shattering of films and coatings. *This flexibility is permanent* — Vinyl Stearate copolymers will not bleed or wash out.

Vinyl Stearate is now available in commercial quantities for the first time in the U. S. The new AIRCO plant at Calvert City, Ky., with a capacity of 2,000,000 pounds a year, is going on stream. Investigate Vinyl Stearate for vinyl copolymers. Write for newly expanded Bulletin V2A and a working sample. Or call our New York office: MUrray Hill 2-6700, Ext. 334.

Typical Applications of Vinyl Stearate Copolymer Intermediates —

Vinyl Stearate-Vinyl Acetate Copolymers: emulsion paints — textile finishing agents — adhesives — paper and board coatings — chewing gum base.

Vinyl Stearate-Vinyl Chloride Copolymers: Under 25% Vinyl Stearate by weight improves fabrication properties in plastic tubing, pipes, sheets, phono records, toys. 30-50% by weight produces flexible, internally plasticized copolymers for food packaging, wire and metal coatings.

Vinyl Stearate-Acrylonitrile or Acrylic Acid Copolymers: adhesives, coating materials, lubricating oil additives.

And in Addition: Vinyl Stearate forms promising copolymers with allyl butyrate, dialkyl maleates or fumarates, maleic anhydride; terpolymers with butadiene-styrene — butadiene-acrylonitrile, vinyl chloride — dialkyl maleates, maleic anhydride — organic nitrogen compounds, maleic anhydride — styrene.

AIRCO **AIR REDUCTION CHEMICAL COMPANY**

A division of Air Reduction Company, Incorporated

150 East 42nd Street, New York 17, N. Y.

Represented Internationally by Airco Company International

CW PHOTO—BUD SHEALY

After a disastrous fire, Columbia Organic rebuilds with an eye toward safety as well as expansion.

Disaster Teaches a Profitable Lesson

Columbia Organic Chemicals Co. last week was back in full production, less than six months after a raging fire nearly wiped it out. The lesson learned from the costly disaster and reconstruction is of broad significance to small and medium size chemical makers, not always as well equipped for fire prevention and disaster recovery as larger firms.

Reconstruction—made more difficult by the critical loss of hard-to-replace records as well as large quantities of raw materials and finished production—has witnessed Columbia Organic's adoption of a completely different concept in plant layout and designed-in safety features (and proved the value of friends in time of need).

Bleak Night: Disaster struck last January 6. That night, fire broke out in the Columbia, S.C., concern's main laboratory, quickly consuming everything in sight. Fed by volatile organic chemicals, flames leaped 300 ft. into the black night, and sporadic explosions thwarted fire-fighting attempts.

The fire burned through the night; then rain, begining early the next morning, ruined the small stock of chemicals salvaged from the flames.

Damage was close to $75,000. Totally destroyed were the research laboratory, production rooms, an adjoining warehouse, an office containing most of the company's records and a stockroom containing over $30,000 worth of research chemicals made by the company. All that remained was an industrial formulating warehouse, 75 ft. away from the charred laboratory.

Time for Fast Action: Columbia Organic was faced with complete loss of its business, unless management acted fast.

First thing company President Max Gergel did was notify the insurance carrier. About 25% of the value of the buildings and equipment was insured, and the insurance concern paid off without delay. Gergel immediately used the money for reconstruction, even before the debris was fully cleared away.

Local chemical companies volunteered to grant Columbia Organic temporary use of any equipment it required. Gergel borrowed enough apparatus to resume limited production. (Still further help—financial—was offered by the firm's bank, but Gergel chose not to use it.)

Record Problems: Management's biggest job was replacing lost records. Working from memory and a few accounts-receivable ledgers that had been kept in the unburned formulating warehouse, Gergel and his staff began to reconstruct customer lists.

In addition, the company wrote customers, telling them of the fire and requesting patience regarding deliveries—but also assuring them that Columbia would soon be back in full production with an expanded product list.

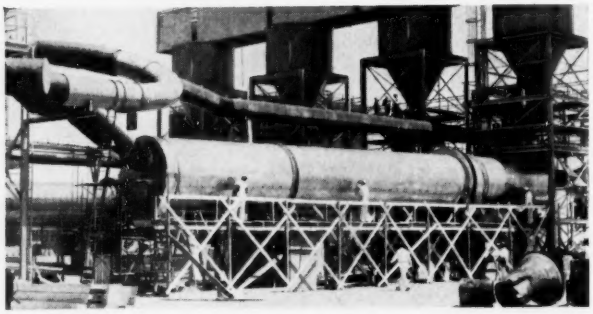
Business and trade publications were informed of the fire and asked to make appeals on behalf of the stricken concern for aid in restoring records. Within weeks, duplicate bills and orders began coming in, helping to clear up a vital area. Gergel told *CW* that response to the company's pleas was "heartwarming" and that his customers exhibited the "utmost patience."

Farmed Out Production: With the

STANDARD HERSEY DRYERS

JOB-ENGINEERED CALCINERS

for U.S. BORAX & CHEMICAL CORPORATION



For Chemical, Mining & Allied Industries...
DRYERS
KILNS
COOLERS
NODULIZERS
and other
CHEMICAL PROCESSING EQUIPMENT

Two Standard-Hersey rotary calciners are now in operation at U.S. Borax's new refinery at Boron, Calif. These large, modern calciners, one stainless steel-clad, were **job-engineered** and built by Standard Steel.

If you have a processing problem, why don't you, too, call upon Standard's 57 years of rotary processing experience?

STANDARD STEEL CORPORATION

General Offices & Plant, 5010 Boyle Avenue, Los Angeles 58, California

Midwest Offices & Plant **LEADER IRON WORKS** *Decatur 10, Illinois*

(Division of Standard Steel Corporation)

ROTARY DRYERS · KILNS · COOLERS · ASPHALT PLANTS

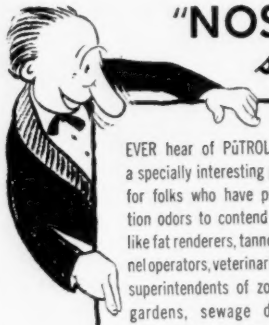
SULPHUR

- **HIGHEST QUALITY**
  99.5% Minimum purity
- **CONVENIENT DELIVERY**
  Available in Crude, Bulk, Liquid
- **DEPENDABLE LOW-COST SUPPLY**

Mines at three locations on the Gulf Coast, Plants in Wyoming and at Fort St. John, British Columbia

JEFFERSON LAKE SULPHUR COMPANY

Domestic Sales Offices
Prudential Bldg.
Houston 25, Texas



"NOSEY" says:

EVER hear of PŭTROL®? It's a specially interesting product for folks who have putrefaction odors to contend with — like fat renderers, tanners, kennel operators, veterinarians and superintendents of zoological gardens, sewage disposal plants and city dumps. It's a powerful deodorant, particularly suited for controlling decomposition odors from decaying protein materials. And it's really low-priced, too! Write FRITZSCHE for samples of PŭTROL® and for further details . . . or for assistance with any problem involving unpleasant odors now causing you concern.

FRITZSCHE *Brothers, Inc.* Established 1871

PORT AUTHORITY BUILDING
76 NINTH AVENUE, NEW YORK 11, N.Y.

quest for records and other clerical data underway, Gergel turned toward increasing production on a standby basis. Companies associated with Columbia Organic (in the exchange of materials and technical information) were asked to take over the most pressing production needs. Roberts Chemical Co. (Nitro, W.Va.) and Wateree Chemical Co. (Lugoff, S.C.) stepped in to help, as did several other companies.

Designed for Safety: Rebuilding got underway along lines laid down by Gergel. He wanted to make certain that the new buildings were free of those hazards that appeared to contribute to the cause and spread of the fire.

Gergel decided to both isolate and fireproof the production buildings. Instead of again erecting a single, large laboratory, he decided to construct three 20-ft.-square buildings (*see cut, p. 75*) 50 ft. apart. The buildings were constructed of concrete block with Transite roofs and steel trusses. Tables are of steel and Transite with gutters underneath to drain off spilled materials to a clinker field outside the building. Each structure is equipped with a large exhaust fan and special plumbing and electrical fixtures.

In the new layout, plant production operations are separated into three categories, with a separate building for each. The most flammable reactions are carried on in one building, the most corrosive in another, with distillations taking place in the third concrete structure.

A minimum of chemicals—only what is needed at the time—is kept in each building. Raw materials are stored away from the reaction area and finished products are removed to other buildings.

A drain field lower than the buildings has been constructed as part of the foundation of each, and outside telephone service has been installed. Gergel says that the fire's destruction of phone lines at the old plant delayed notification of the fire department and key plant personnel during the early stages of the blaze. As an additional safety factor, records are now kept in fire-resistant cabinets.

Rebuilding with all these changes was costly. Gergel told *CW* that constructing separate buildings was about 1½ times as expensive as the original

NITROPARAFFINS
DIMETHYLAMINE
METHANOL
AMMONIA
FORMALDEHYDE
BENZYLTRIMETHYLAMMONIUM CHLORIDE
HYDROXYLAMMONIUM CHLORIDE
TRIMETHYLAMINE
HYDROXYLAMMONIUM SULFATE
ETHYL ACETATE
DIBUTYL PHTHALATE
NITROMETHANE
BUTYL LACTATE
AMYL ACETATE
BUTYL ACETATE
BUTANOL

ETHYL ALCOHOL
RIBOFLAVIN, USP
AMP (2-Amino-2-Methyl-1, 1-Propanol)
METHYLAMINES
HYDROXYLAMMONIUM ACID SULFATE
PENTAERYTHRITOL
TRIBUTYL PHOSPHATE
MONOMETHYLAMINE
1–NITROPROPANE
2–NITROPROPANE
BUTYL STEARATE
NITROETHANE
ALKATERGES
ACETONE

CSC

Prime source OF vital chemicals

FOR LEADING INDUSTRIES

• From a beginning comprised of but three fermentation products, CSC growth has today reached the point where the chemicals produced for industry number in the hundreds.

• Along the way, CSC was the first American company to synthesize and commercially produce many chemicals... methanol, for example.

• For production of the exact grade and formula of many chemicals, the position of CSC is unexcelled... industrial alcohols, for example.

• Because of an intensive research and development program, CSC can place at your disposal many chemicals which are unsurpassed in potential usefulness . . . the versatile nitroparaffins, for example.

It is for reasons such as these, as well as ample capacity, high quality and dependable delivery, that CSC is more and more a prime source of vital chemicals for leading industries. Write today for complete Products Catalog: Industrial Chemicals Dept., Commercial Solvents Corporation, 260 Madison Ave., New York 16, N. Y.

COMMERCIAL SOLVENTS

260 MADISON AVENUE **CORPORATION** NEW YORK 16, N. Y.

Atlanta • Boston • Chicago • Cincinnati • Cleveland • Detroit • Houston • Indianapolis • Kansas City • Los Angeles • Louisville
Memphis • Milwaukee • Minneapolis • Newark • New Orleans • New York • Pittsburgh • St. Louis • San Francisco
IN CANADA: McArthur Chemical Co., Montreal, Que. • IN MEXICO: Comsolmex, S.A., Mexico 7, D. F.

CSC
INDUSTRIAL CHEMICALS

Shanco Routs Lac Bug

India's little Lac Bug (coccus lacca), prime producer of shellac for centuries, has been successfully replaced by Shanco 340 Resin.

Used as a shellac substitute, manufacturers have found in floor finishes 340 produces an extra hardness, a toughness, is extremely scratch resistant, assures a high gloss and good weathering, has good leveling qualities and water spot resistance. Write for sample.

We issue from time to time the SHANCO MESSENGER, a publication of timely topics and Shanco products. Your name and address will bring it to you.

SHANCO

Plastics & Chemicals Inc.

TWO MILE CREEK ROAD • TONAWANDA, NEW YORK

HOW OXY-CATALYST SYSTEMS STOP INDUSTRIAL AIR POLLUTION —RECOVER WASTE HEAT

New brochure gives facts and figures on typical installations—send for your free copy now!

Oxy-Catalyst Systems for air pollution control and waste heat recovery are one of the most important and most effective solutions to these problems ever developed. Engineered to your individual requirements, they can clean up close to 100% of combustible pollutants and odors. They can also recover the waste heat in process exhaust gases; and they can often do both at once.

This new brochure tells how Oxy-Catalyst installations have stopped air pollution—often at an actual saving—in a wide range of industries. If air pollution is a problem in *your* operations, write for your free copy now.

OXY-CATALYST, INC.

WAYNE 6, PA., U.S.A.

Catalysts for fume and odor elimination, air pollution control, and waste heat recovery

Send me new brochure on Oxy-Catalyst Systems for air pollution control and waste heat recovery.

Name_____

Firm_____

Street_____

City_____ Zone_____ State_____

ADMINISTRATION

laboratory. But it gives the company twice the floor space and many times the old plant's safety.

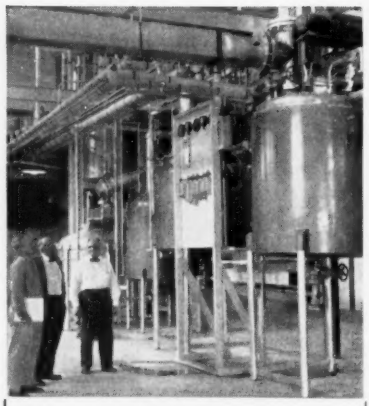
Wartime Starter: Columbia Organic was organized in '45. Its first contracts were with the War Production Board's Rubber Research Program and the Manhattan District Engineers for the production of fluorine compounds. The company now produces 400 organic chemicals including research chemicals, alkyl halides and their derivatives and a host of fluorine compounds. Principal product is an essential raw material for solid propellent fuels used in rockets and missiles. With its associated companies, Columbia Organic employs 50 persons, about 20 at Columbia.

LABOR

Retroactive Powder Contract: Employees at Hercules Powder Co.'s, Hercules, Calif., plant have ratified a contract calling for a 4¢-hourly across-the-board wage increase retroactive to Jan. 1, 1958. The 244 workers represented by Local 1-587 of the Oil, Chemical & Atomic Workers Union will also get what amounts to an additional 1½-2¢/hour hike—a 3.4% bonus on hourly pay, which formerly was paid as a year-end bonus, will now become part of the wage rate. It will be applied to holidays, vacation and overtime. The company agreed to pay an additional $2.22/month for each employee for hospitalization insurance to offset increased premiums. Vacations are liberalized, with workers getting three weeks after 10 years. The new contract expires Jan. 1, 1960.

•

Independent Renewal: Independently organized employees at Du Pont's Louisville, Ky., neoprene plant have ratified a three-year agreement after operating for more than a week on no contract at all. A previous contract expired during April, and 1700 employees at the plant voted not to renew it because, according to a member of the union, it failed to include a wage raise and because of disappointment over seniority provisions. The new contract, however, contains the same provisions as did the old one. According to Burl H. Watson, president of the Neoprene Craftsman Union, prior ratification failed because seniority provisions were not properly explained to union members.



America's Largest Continuous Producer of

ALUMINUM ISOPROPYLATE

Dependable Deliveries from a Dependable Supplier

CHATTEM CHEMICALS

Chattanooga 9, Tennessee

Address Inquiries to:

F. L. BODMAN COMPANY

101 N. 33rd St., Philadelphia 4, Pa.

SODIUM SULPHATE

(Anhydrous)

SALT CAKE

PRIOR CHEMICAL CORPORATION

420 LEXINGTON AVENUE

NEW YORK 17, N. Y.

CABLE: PRIORCHEM NEW YORK

PHONE: LExington 2-9811

See...

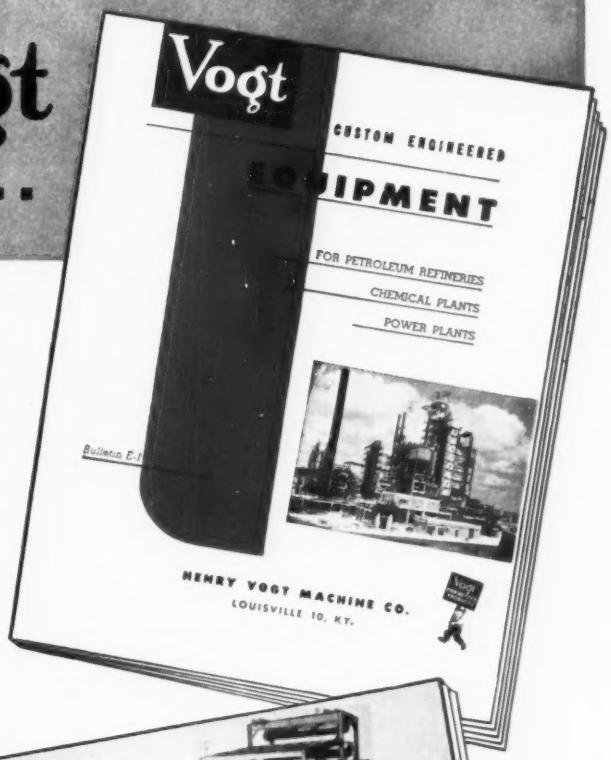
WHAT Vogt CAN DO FOR YOU..

Bulletin E-1 shows Vogt's advanced designs in heat exchangers, reactors, oil chillers, crystallizers, pressure vessels, steam generators and ice making and refrigerating machinery for countless applications in petroleum refineries, chemical plants, power plants and related industries.

Use the handy coupon below and send for your copy!

HENRY VOGT MACHINE CO.
Louisville 10, Ky.

Branch Offices: NEW YORK, CHICAGO, CLEVELAND, DALLAS, PHILADELPHIA, ST. LOUIS, CHARLESTON, W. VA.



Mail Coupon today

HENRY VOGT MACHINE CO.
10th & Ormsby Sts., Louisville 10, Ky.
Send copy of Bulletin E-1

NAME_____

FIRM_____

STREET_____

CITY_____ State_____

24A-GCW

CHEMICAL WEEK • ADVERTISERS INDEX

May 10, 1958

AIR REDUCTION CHEMICAL CO 74
Agency—G. M. Basford Co.
ALLIED CHEMICAL CORP. NITROGEN DIV. 53
Agency—G. M. Basford Co.
ALUMINUM CO. OF AMERICA 10
Agency—Ketchum, MacLeod & Grove, Inc.
AMERICAN AGRICULTURAL CHEMICAL CO., THE 54
Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.
AMERICAN CYANAMID CO. .....3rd Cover
Agency—Hazard Adv. Co.
AMERICAN FLANGE & MFG. CO. 15
Agency—Freiwald & Coleman Adv.
AMERICAN MINERAL SPIRITS CO. 73
Agency—Lee Burnett Co., Inc.
ATLANTIC REFINING CO. 39
Agency—N. W. Ayer & Son, Inc.
BALTIMORE & OHIO RAILROAD 40
Agency—Richard A. Foley Adv.
BECCO CHEMICAL DIV. FOOD MACHINERY & CHEMICAL CORP. 67
Agency—John Mather Lupton, Inc.
BEMIS BRO. BAG CO. 61
Agency—Gardner Adv. Co.
BINDER COOPERAGE CO. 38
Agency—Charles D. Karlsruher
BLOCKSON CHEMICAL CO. 12
Agency—Wm. Balsam Adv.
BROOKFIELD ENGINEERING LABORATORIES, INC. 49
Agency—Cremer-Trowbridge Co.
CATALIN CORP. OF AMERICA 44
Agency—Walter J. Gallagher Adv.
CHATTEM CHEMICALS 78
Agency—Lookout Adv. Agency
CHEMICAL CONSTRUCTION CORP. 13
Agency—Godwin Adv.
CHICAGO & NORTH WESTERN RAILWAY 63
Agency—The Caples Co. Adv.
COMMERCIAL SOLVENTS CORP. 77
Agency—Fuller & Smith & Ross, Inc.
CONTINENTAL CAN CO. 68
Agency—Batten, Barton, Durstine, & Osborn, Inc.
DRACCO CORP. DIV OF FULLER CO. .. 25
Agency—The Jayme Organization, Inc.
DRAVO CORP. 19
Agency—Ketchum, MacLeod & Grove, Inc.
DU PONT de NEMOURS & CO., E. I. ELECTROCHEMICAL DIV. 41
Agency—Batten, Barton, Durstine & Osborn Inc.
DU PONT de NEMOURS & CO., INC. E. I. GRASSELLI DIV. 60
Agency—Batten, Barton, Durstine & Osborn Inc.
EASTMAN CHEMICAL PRODUCTS 33
Agency—Fred Wittner Adv.
ESCAMBIA CHEMICAL CORP. 45
Agency—Godwin Adv. Agency
ESSO STANDARD OIL CO. 7
Agency—McCann-Erickson Inc.
FRITZSCHE BROS., INC. 76
Agency—Caleon Adv., Corp.
GAYLORD CONTAINER CORP. DIV OF CROWN ZELLERBACH CORP. 1
Agency—French & Shields, Inc.
GENERAL AMERICAN TRANSPORTATION CORP. LOUISVILLE DRYER DIV 8
Agency—Edward H. Weiss & Co.
GENERAL ELECTRIC CO. 48-49
Agency—G. M. Basford Co.
GROSS & CO., INC., A. 62
Agency—G. M. Basford Co.
HERCULES POWDER CO. 20
Agency—Fuller & Smith & Ross, Inc.
HEYDEN NEWPORT CHEMICAL CORP. ..... 4th Cover
Agency—O. S. Tyson & Co.
HOOKER ELECTROCHEMICAL CO. 57
Agency—The Rumrill Co., Inc.
JEFFERSON LAKE SULPHUR CO. 76
Agency—Bauerlein Adv., Inc.
LAWRENCE WAREHOUSE & CO. 52
Agency—Abbott Kimball, Inc.
LINDSAY CHEMICAL CO. 64
Agency—C. Franklin Brown, Inc.
LUMMUS CO., THE 26
Agency—G. M. Basford Co.
METASAP CHEMICAL CO. A SUB. OF NOPCO CHEMICAL CO. 72
Agency—Gray & Rogers Adv.
NATIONAL ANILINE DIV. ALLIED CHEMICAL CORP. 16
Agency—James J. McMahon, Inc.
ORONITE CHEMICAL CO. 2
Agency—L. C. Cole Co.
OXY CATALYST INC. 78
Agency—Gray & Rogers Adv.
PETRO-CHEM DEVELOPMENT CO., INC. 6
Agency—Sam J. Gallay Co., Adv.
PFAUDLER CO., THE 42-43
Agency—The Rumrill Co., Inc.
PFIZER & CO. INC., CHARLES 58
Agency—MacManus, John & Adams, Inc.
PHILADELPHIA QUARTZ CO. 70
Agency—The Michener Co.
PRIOR CHEMICAL CORP. 78
Agency—Robertson Martin Adv.
PUBLICKER INDUSTRIES, INC. 36-37
Agency—Al Paul Lefton Co., Inc.
REICHHOLD CHEMICALS INC. 9
Agency—MacManus, John & Adams, Inc.
SHANCO PLASTICS & CHEMICALS, INC. 78
Agency—Gordon J. Weisbeck, Inc.
SHELL CHEMICAL CORP. ..... 2nd Cover
Agency—J. Walter Thompson Co.
STANDARD STEEL CORP. 76
Agency—The McCarty Co.
STAUFFER CHEMICAL CO. 35
Agency—John Mather Lupton Co.
TEXAS GULF SULPHUR CO. 11
Agency—Sanger-Funnell, Inc.
TITANIUM PIGMENT CORP. OF NATIONAL LEAD CO. 14
Agency—Doyle, Kitchen & McCormick Inc.
UNION CARBIDE CHEMICALS CO. DIV. OF UNION CARBIDE CORP. 71
Agency—J. M. Mathes, Inc.
U. S. STEEL PRODUCTS DIV. OF U. S. STEEL CORP. 46
Agency—Batten, Barton, Durstine & Osborn, Inc.
VICTOR CHEMICALS WORKS 29-30
Agency—The Buchen Co.
VIRGINIA DEPARTMENT OF CONSERVATION & DEVELOPMENT ... 32
Agency—Cargill & Wilson, Inc.
VOGT MACHINE CO., HENRY 79
Agency—Farson, Huff & Northlich Adv.
WESTVACO CHLOR ALKALI DIV. OF FOOD MACHINERY & CHEMICAL CORP. 5
Agency—James J. McMahon Adv.
WILLIAMS & CO., C. K. 38
Agency—William A. Hatch, Inc.
WYANDOTTE CHEMICAL CORP. 4
Agency—Brooke, Smith, French & Dorrance, Inc.

traders SECTION

(Classified Advertising)

F. J. Eberle, Business Mgr.

CHEMICALS: Offered/Wanted 81
EMPLOYMENT 81
EQUIPMENT: Used/Surplus New For Sale 81
WANTED 81
MANAGEMENT SERVICES 81
SPECIAL SERVICES 81

ADVERTISING STAFF

Atlanta 3 ..... Robert H. Powell, 1301 Rhodes-Haverty Bldg., JAckson 3-6951

Boston 16 ..... 350 Park Square Building, Paul F. McPherson, HUbbard 2-7160

Chicago 11 ..... Alfred D. Becker, Jr., R. J. Claussen, 520 N. Michigan Ave., MOhawk 4-5800

Cleveland 15 ..... Vaughn K. Dissette, 1510 Hanna Bldg., SUperior 1-7000

Dallas 1 ..... Gordon Jones, The Vaughn Bldg., 1712 Commerce St., Riverside 7-5117

Denver 2 ..... J. Patten, 1740 Broadway, ALpine 5-2981

Detroit 26 ..... 856 Penobscot Bldg., H. J. Sweger, Jr., WOodward 2-1793

Frankfurt/Main ..... Michael R. Zeynel, 15, Landgraf-Wilhelm, Germany

London H. Lagler, McGraw-Hill House, 95 Farrington St., E.C. 4, England

Los Angeles 17 .... John B. Uphoff, 1125 West Sixth St., MAdison 6-9351

New York 36 ..... Knox Armstrong, B. A. Johnson, P. F. McPherson, Charles F. Onasch, L. Charles Todaro, 500 5th Ave., OXford 5-5959

Philadelphia 3 .. William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts., RIttenhouse 6-0670

Pittsburgh 22 V. K. Dissette, Room 1111 Henry W. Oliver Bldg., ATlantic 1-4707

San Francisco 4 .. William C. Woolston, 68 Post St., DOuglas 2-4600

St. Louis 8 ..... 3615 Olive St., Continental Bldg., R. J. Claussen, JEfferson 5-4867

ADMINISTRATION

No wage raise agreement is in the contract although either party may reopen for wage negotiations on 10-day notice. Present wage scales range from $2.07 to $2.90 an hour at the plant.

•

Signs from States: An indicator of state-level response to appeals for state labor legislation on corruption and racketeering comes from New York. Gov. Averell Harriman has vetoed a bill because it contained "serious dangerous flaws" that "could undermine responsible labor unions and harm their members." He objected to the proposal's ambiguous language, "bad drafting" and failure to finance funds for the corrective program.

KEY CHANGES

George E. Holbrook, to vice-president, director and member of the executive committee; **Charles B. McCoy,** to general manager, Elastomer Chemicals Dept., Du Pont.

M. E. Peck, to executive vice-president, National Laboratories (Toledo), subsidiary of Lehn & Fink Products Corp.

H. R. Ferguson, to executive vice-president and treasurer; **H. W. Ritchey,** to vice-president; and **H. H. Michaels, Jr.,** to assistant secretary; Thiokol Chemical Corp. (Trenton, N. J.).

N. R. Althauser, F. J. Close, B. J. Fletcher and **R. O. Keefer,** to vice-presidents, Aluminum Co. of America (Pittsburgh, Pa.).

Franklin S. Chance, Jr., to director, Pfizer International Subsidiaries, Chas. Pfizer & Co. (New York).

KUDOS

To **Joseph V. Swintosky,** research group leader, Smith Kline & French Laboratories (Philadelphia), the 1958 Ebert Prize, presented by the American Pharmaceutical Assn.

DIED

Osborn H. Cilley, 75, vice-president and director, Raybestos-Manhattan, Inc., at Lancaster, Pa.

George Vincent Slottman, 54, vice-president—research and engineering, Air Reduction Co., at New York.

Employment Opportunities

CHEMICAL ENGINEER

with soda ash and other alkali experience required to assist with evaluation and design of new plant. Foreign travel required.

P-7843 Chemical Week
520 N. Michigan Ave., Chicago 11, Ill.

ADDRESS BOX NO. REPLIES TO: Box No Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITIONS VACANT

Opening for research and development chemist experienced in the manufacture and various uses of protective coatings, wax, wax compounds, resins, polymer dispersions, plastic, and bituminous materials in industrial manufacturing company laboratory located in Middle West. Apply by letter giving full details of education and experience. All replies will be confidential. P-5213, Chemical Week.

New Product Development Director full charge new product development for smaller North Jersey pharmaceutical company now entering expansion program. Ability to expedite programs and coordinate technical and clinical activities. Organic chemistry Ph.D. Excellent opportunity in top echelon of company. Our employees know of this ad. Send resume P-7768, Chemical Week.

Philadelphia area chemical specialty manufacturer seeks R and D chemist with experience in fatty oils as applied to the field of metal working lubricants. P-7905, Chemical Week.

SELLING OPPORTUNITY OFFERED

Chemical Manufacturer producing complete line chromium chemicals, optical whiteners and tanning chemicals, seeks distributor covering St. Louis, Missouri and surrounding area. Warehouse facilities desirable. Excellent profit possible and factory assistance assured. RW-7922, Chemical Week.

POSITIONS WANTED

13 years Chem'l Sales, 3 in Sales mgm't. BS. in Chem. aggressive and diversified experience. Age 45. Prefer South, Southwest or Calif. PW-7882, Chemical Week.

Chemist, single, six years C.R. and D. exp. in petroleum industry and one years experience in boiler water analysis and treatment seeking position in sales application. Intelligent, aggressive, willing to relocate for a growth opportunity. Good personality and sales potential. PW-7888, Chemical Week.

Management SERVICES

CHEMASTER LABORATORIES

CHEMICAL ANALYSES
Complete—$75 per sample

Essential oils, drugs, fats, ag chemicals, paints, oils, pesticides, petrochemicals, protective coatings, textile chemicals, waxes, specialties, water, cosmetics, etc.

Send credit references with samples
Box 37, Steinway Station, Long Island City 3, N.Y.
YEllowstone 2-0203

Clark Microanalytical Laboratory

CH, N, S, Halogen, Fluorine, Oxygen, Alkoxyl, Alkimide, Acetyl, Terminal Methyl, etc, by specialist in organic microchemical analysis.

HOWARD S. CLARK, DIRECTOR
P. O. Box 17 Urbana, Ill.
EMpire 7-8406

JAMES P. O'DONNELL

Consulting Engineer

Professional Engineering for the Petroleum and Process Industries

39 Broadway
New York 6, N. Y.
Beaumont, Texas

ITALY

- Importers & wholesalers established in Milan from over half a century
- Wide experience in heavy and pharmaceutical chemicals and intermediates.
- Own warehouses, national distribution chain
- Ready to represent first class manufacturers interested in exporting to Italy
- Banking and trade references on request

Reply to RA-7841 Chemical Week
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

SELLING OPPORTUNITIES WANTED

Manufacturer's Representative—Additional lines desired for Agricultural, Paint, Adhesive and Oil Industries in five state Midwestern Area. Can offer experienced Technical Sales coverage. RA-7762, Chemical Week.

Representation in Harbor areas Los Angeles available. Can handle process equipment (industrial or marine), supplies and chemicals. Have processing facilities & ample warehouse space. C. B. Stevenson, CE, PO Box 354, Wilmington, Calif.

GROUP LEADER
ANALYTICAL CHEMIST

For responsible position supervising a group engaged in research and development work on analytical problems associated with the development of new polymers and organic chemicals. Varied and challenging assignments. M.S. or Ph.D. required with experience in organic and instrumental methods. This position represents an outstanding opportunity for a man of high caliber. Suburban area. All replies confidential. Send letter indicating education, experience, availability and salary requirements to

P-7880 Chemical Week
Class Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

TECHNICAL SERVICE — SYNTHETIC DETERGENTS
Formulation work, sales development & technical service in field of synthetic detergents. Will handle industrial, household and cosmetic products on staff of large chemical manufacturer located in metropolitan N.Y. area. Indicate qualifications, experience and salary desired.

P-7878 CHEMICAL WEEK
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Tracers to the Chemical Process Industries

FOR SALE

Unused 20,000 Gallon Horizontal Stainless Steel Tank with internal baffle. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Devine 3' x 8' Rotary Vacuum Dryer, Teflon lined (can be used in application requiring st. st.) Perry, 1415 N. 6th St., Phila., Pa.

Sturtevant Rotary Dryer 4' dia. x 12'6" long. Stainless steel contact parts. Perry Equipment Corporation, 1415 N. 6th St., Phila. 22, Pa.

Free Catalog! Fort Pitt Brewery, Pittsburgh-16- page, 2-color illustrated catalog showing all the processing equipment in this plant which ceased operations in November. Thousands of dollars worth of equipment being sold piecemeal for a mere fraction for immediate delivery. Write to: Chas. S. Jacobowitz Corp., 3082 Main Street, Buffalo 14, N.Y., Telephone: AMherst 2100.

Red Top Brewery Equipment For Sale—Plant closed in November. $250,000 was spent two years ago to rehabilitate. Everything must go piecemeal. Write for complete details to: Red Top Brewery, 242 West McMicken Ave., Cincinnati 14, Ohio.

For Sale—Klein Diatomaceous Earth Filter with new Niagara leaves, never used; 350 sq. ft. area, with separate stainless slurry feeder, all fittings; immediate delivery, priced about half of new; dealers invited, subjected to prior sale. FS-7809, Chemical Week.

Yeast Dryer—Fischer rotary yeast dryer Model 36/40, with pulverizers, elevator, still erected in plant in Eastern Pennsylvania, complete details by writing FS-7818, Chemical Week.

SPECIAL SERVICE

Contract Research & Development. Experienced Chemists and Engineers to assist in your research and development problems. For more information, write to: Chemsearch, Inc, 207 Rhodes Ave, New Orleans 14, Louisiana.

SURPLUS WANTED

CHEMICALS, PHARMACEUTICALS, OILS
PLASTICIZERS, RESINS, DYES
SOLVENTS, PIGMENTS, ETC.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street, New York 5, N. Y.
HAnover 2-6970

BUYERS OF CHEMICALS

CHEMICALS—OILS—SOLVENTS
DRUGS—RESINS—WAXES
PLASTICS—COLOR—ETC.

BARCLAY CHEMICAL COMPANY, INC.
75 Varick Street New York 13, N. Y.
WORTH 4-5120

SURPLUS CHEMICALS WANTED

Chemicals—By-Products—Plasticers
Pigments—Resins—Solvents

CHEMSOL, INC.
70 Dod Street, Elizabeth N.J. EL 4-7654

SURPLUS BOUGHT

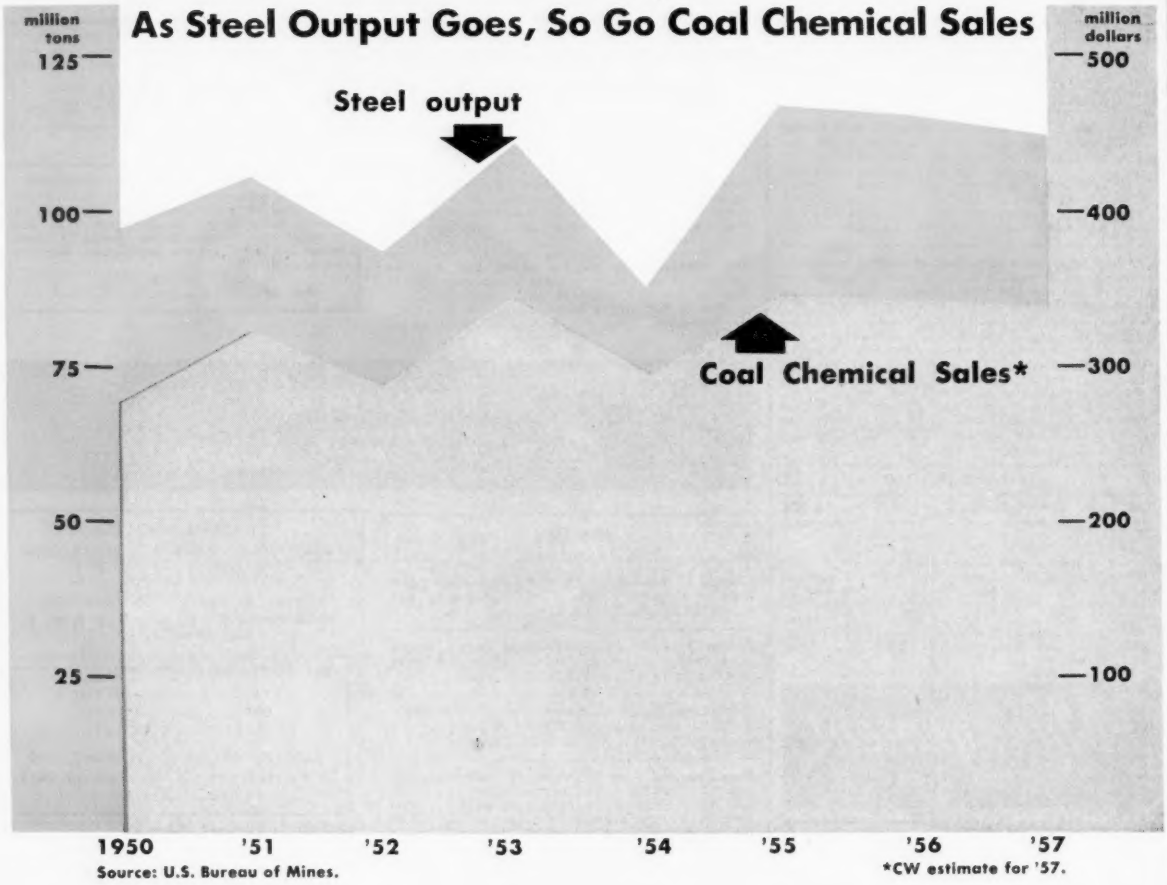
ODD LOTS—DISCONTINUED RAW MATERIALS
—SPENT OR CONTAMINATED SOLVENTS
RESIDUES—METAL SLUDGES—
OBSOLETE PLANT INVENTORIES

Industrial By-Products & Surplus Co.
DIV. OF ACETO CHEMICAL CO., INC.
40-40C Lawrence St., Flushing 54, N. Y.
INdependence 1-4100

BUSINESS OPPORTUNITIES

50 Acres, R.R. siding and all utilities, 20 min- utes from midtown New York, Newark, Jersey City, Paterson, any type heavy or light industry, good transportation, low taxes, labor available, $7,500/acre. BO-7911, Chemical Week.

Most Attractive Partnership Offer for Chemist familiar with automobile polishes and waxes and general auto clean up chemicals. BO-7856, Chemical Week.



Coal-Chemical Sales Reflect Steel Output

This week's continued sluggish steel activity will have a pronounced effect on availability and sales of coal-derived chemicals.

As the chart clearly shows, coal-chemical sales are a good copy of the seesawing pattern of steel production. Since '55's record output of 117 million tons, steel production has been backsliding. It was 115 million tons in strike-affected '56, 112.7 million tons in '57. Concurrently, coal-chemical sales have gone from a high of $348.4 million in '55, down to $343 million in '56, and lower to an estimated $337 million in '57.

Although stock carry-over of coal-chemicals affects annual sales, the over-all trend is not altered.

One of the most important chemicals derived from coke-consuming steel production is ammonium sulfate. Last year the U.S. exported about one-fourth of total ammonium sulfate made—both synthetic and coke-derived.

Now, coke-derived sulfate is in tight supply and synthetic producers of the chemical are confining their product to the domestic market. Result: sulfate exports have been seriously cut.

AEROSOL® 22

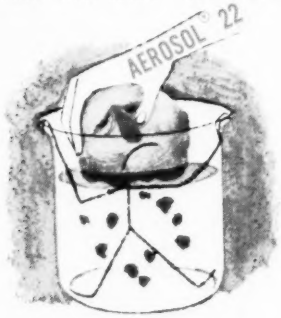
Surface Active Agent

DELIVERS The Promise of an Unusual Surfactant Molecule!

AEROSOL 22 is unsurpassed or unequaled in performance by other commercial surface active agents in the many important respects detailed below. These outstanding properties are a result of a highly active molecular structure that combines a sodium sulfonate and three sodium carboxy groups with an amide linkage and an 18-carbon aliphatic. In spite of a molecular weight of 653, it is completely soluble in water—yet its hydrophobic properties are maintained in high-temperature ranges where many surfactants lose their effectiveness. This molecular "powerhouse" promises unusually good results—and *delivers* them in a wide variety of applications.

Solubilizing the "Insolubles"

AEROSOL 22 goes well beyond emulsification in putting certain compounds that are normally allergic to water into stable "solutions." It

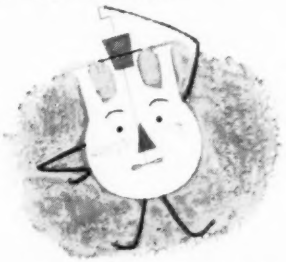


will also increase the solubility of certain soaps and detergents in aqueous media containing high salt concentrations. It is almost impossible to "salt out" AEROSOL 22 from its aqueous solutions by adding salts containing monovalent cations—and this stability to electrolytes is largely passed on to the materials it takes into solution. For example, high molecular weight naphthenic and cresylic acids are made soluble in 25% caustic soda.

Emulsion Polymerization Made Easy!

In this popular polymerization technique, much depends on the proper choice of surface active agent for a particular monomer system to assure:

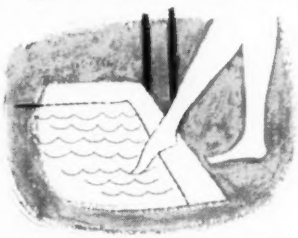
1. Rapid reaction rate.
2. Storage stability with no drop in surface tension—no viscosity increase.
3. No rewetting or water-spotting of dried coatings or films.
4. Excellent rub stability.
5. Good film color.



Here is where the all-round characteristics of AEROSOL 22 combine to do an excellent job, satisfying the list above—and more. Lots of up-to-date information on this rapidly expanding production technique is available through your Cyanamid representative. Perhaps you'll be interested in the synergistic action of other AEROSOL surface active agents used in conjunction with AEROSOL 22 to give even higher levels of polymerization performance.

Wetting . . . to a Degree

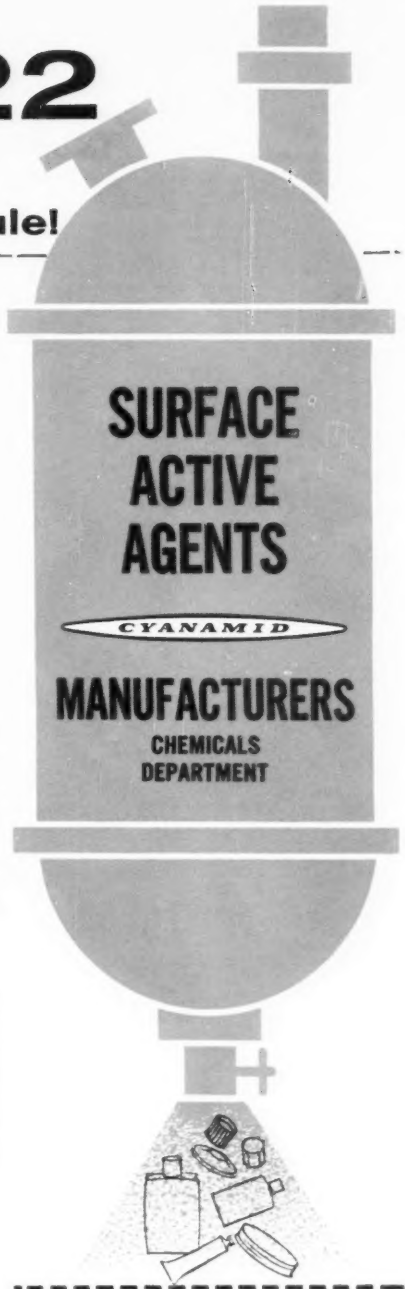
The surface tension of water to which 0.1 to 2.0% AEROSOL 22 has been added varies from 40-41 dynes only. This controlled wetting action is particularly good for writing and drawing inks since the degree of wetting is not significantly affected by the evaporation or dilution these inks undergo. In rug and upholstery cleaners, AEROSOL 22 does not wet through and soak the material, but



instead contributes to thorough on-the-surface cleaning. Wherever wetting is to be kept within bounds, AEROSOL 22 is worth investigation.

Sorry . . .

We haven't space to discuss in detail the anti-gelling, demulsification, dispersion and other characteristics. But they're detailed in a 20-page booklet—and the coupon on the right will bring it to you.



American Cyanamid Company
Manufacturers Chemicals Department
30 Rockefeller Plaza, New York 20, N. Y.

Please send me:

- ☐ Bulletin on AEROSOL 22 Surface Active Agent
- ☐ Sample of AEROSOL 22

Name_____

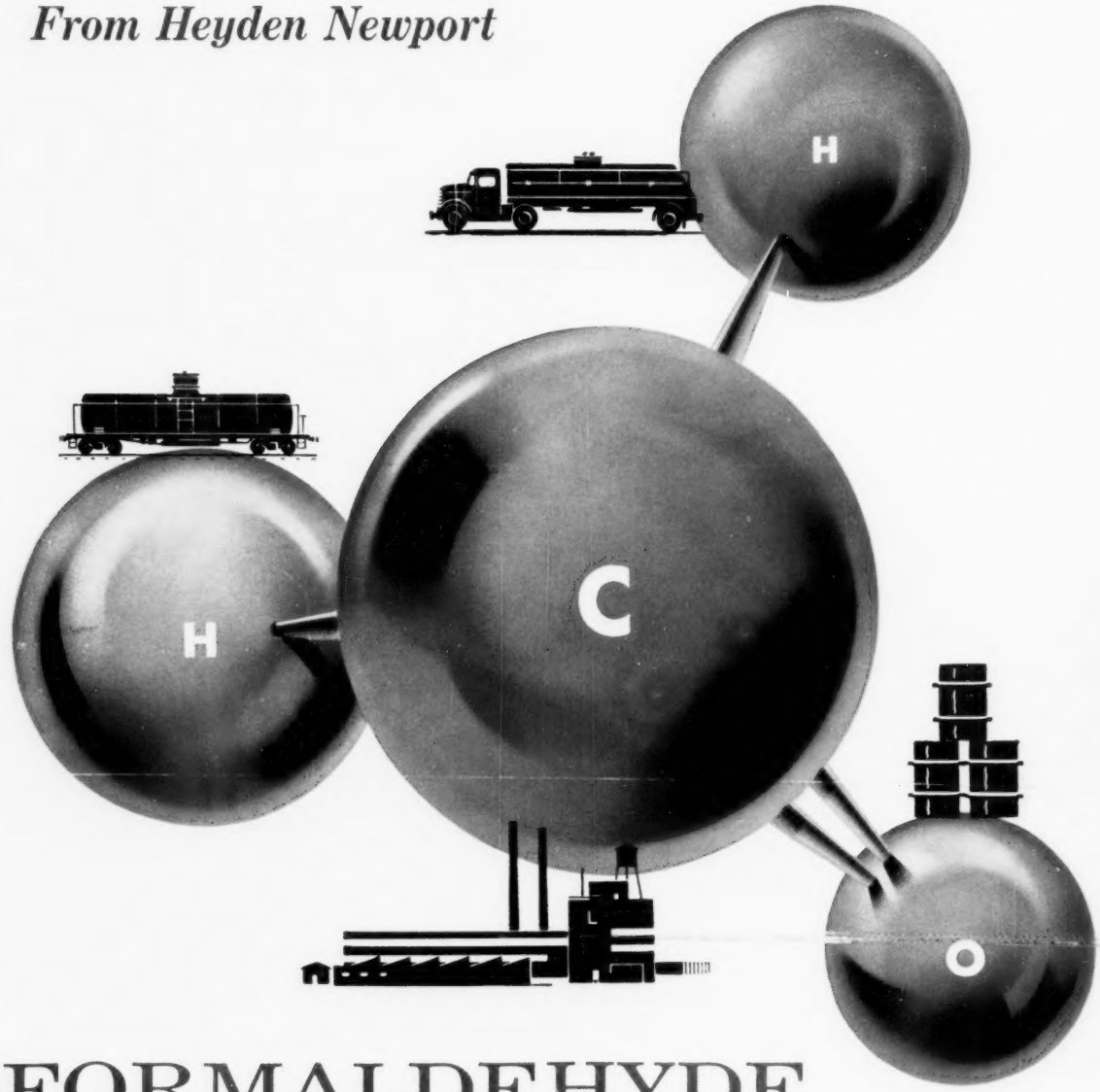
Company_____

Address_____

City_____ Zone____ State_____

In Canada: North American Cyanamid Limited, Toronto and Montreal

From Heyden Newport



FORMALDEHYDE

You can count on Heyden Newport Formaldehyde for these outstanding advantages:

- top quality
- all commercial concentrations
- quick delivery
- expert technical assistance

All backed by over 50 years experience.

Let these advantages work for you . . . choose Heyden Newport Formaldehyde for *top quality and service.* Heyden Newport Chemical Corporation, 342 Madison Avenue, New York 17, N. Y.

Formaldehyde U.S.P.

37% Formaldehyde,
Methanol-Free

44% Formaldehyde,
Methanol-Free and Inhibited

45% Formaldehyde,
Methanol-Free and Inhibited

50% Formaldehyde,
Methanol-Free

HEYDEN NEWPORT

Where tradition meets tomorrow in chemical progress